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ABSTRACT

This study develops an action research approach to the investigation of children's games and sports activities. Eight hypotheses concerning the differential effects of participation in organized sports and participation in child-directed games are generated from a review of theory and research. Hypothesis 1 postulates that participation in organized sports will be negatively related to participation in child-directed games. Additional hypotheses probe the relation of game and sport participation to prosocial behavior, self-esteem, persistency, tolerance for ambiguity, locus of control, machiavellianism, and creativity. Several instruments were developed and modified for data collection among a sample of 170 male and 174 female subjects in 3 elementary schools. Analysis of variance, correlation and regression techniques were used to analyze the data. Hypothesis 1 was not supported. Three additional hypotheses received no support, while 4 of the hypotheses received either partial or moderate support within age-sex sub-sets of the sample. A follow-up study of the effect of sports participation on personality development found a tendency for nonparticipating females to become less machiavellian. Conclusions as well as implications for research and practice are advanced. (RH)

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# GAMES AND SPORT IN CHILDREN'S PERSONALITY AND SOCIAL DEVELOPMENT

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## INTRODUCTION

Peter Bruegel's famous painting entitled "Children's Games" depicts approximately 250 children playing 30 - 40 games in the one sixteenth century neighborhood. While Bruegel's style reflects artistic license (The scene may be called rich, busy, or chaotic depending on the viewer's perspective.), it is interesting to speculate about how he would represent children's games today. Perhaps ball fields, uniforms, and supervising adults would be in evidence. (Only one or two adults are to be found in the painting.) Such would be a realistic portrayal of contemporary childhood recreation.

Organized sports for children have expanded dramatically in the last few decades. Estimates of the number of children between ages 7 and 12 participating in sports run upwards to ten million. Although little league baseball accounts for the largest portion of this number, competitive sports organizations have developed in hockey, football, basketball, tennis, soccer, swimming and others. To this large number must be added the involvement and investment of a multitude of adults - parents, coaches, officials, and administrators. Taken all together, it is quite likely that the phenomenon of organized sports for children has a significant impact on the individuals involved and on the larger society in which they are a part. Thus, it is one of the purposes of this paper to determine the relationship of sport participation to personality and social adjustment in childhood.

While there is some conceptual similarity in the terms "sport" and "game," they can be distinguished in a number of important ways. A game is defined by Avedon and Sutton-Smith as "an exercise of voluntary control systems in which there is an opposition between forces, confined by a procedure and rules in order to produce a disequilibrial outcome" (1971, page 7). A game becomes a sport only when it is organized with established rules, national regulations and a governing administrative structure (see Loy, 1969). The play ("exercise of voluntary control systems") in the game comes at two points: (1) in the set-up and maintenance of the game[1] and (2) during the course of action when the players are enjoyably absorbed for no other reason but the game itself. By minimizing the importance of the outcome and extrinsic rewards, a sport may have the second of those two features; but the play involved in structuring the process is entirely precluded by the very fact that the social organization involved decides how the game will be played in advance and provides the support structure (e.g., the officials) to afford the players minimal concern about how the game is maintained. This organization thus enables a focus on performance and its consequences whereas the potential for modification of most child-directed games requires that primary attention be given by children to how the game is designed and maintained.

The fact that games differ from sport in this manner requires that they be analyzed separately. Interaction over the process in games is alleged to have a significant impact on moral and social development (Piaget, 1932; Mead, 1962); and self control in game situations is thought to have certain

[1]Although Denzin (1975) uses the phrase somewhat more specifically, we might refer to this as "playing at the game."

advantages for personality development as well (Devereux, 1972; Lever, 1976). Thus it is the second purpose of this paper to further evaluate theory and evidence regarding the role of the child-directed games in personality development and social adjustment.

While they are different as previously discussed their obvious similarities as recreational activities justify treating them simultaneously; but another reason for doing so is that their existence may be somewhat interrelated. Just as there has been a rapid expansion of involvement in organized sports, there are indications of a decline in both the quantity and variety of child-directed games (Rosenberg and Sutton-Smith, 1961; Devereux, 1972). While television, social mobility, and changing psychological needs have been implicated in this trend (Devereux, 1972; Rosenberg & Sutton-Smith, 1961) it is conceivable that the evolution of organized sports may also be contributing to it in certain ways. For example, children involved in organized sport have less time to devote to their own games than those without this amount of involvement. Skubic (1956) found that of those who were playing baseball 81% estimated that they spend over half of their free time for that purpose. While methodological problems may have inflated this figure somewhat, with more participation opportunities and with a greater emphasis on performance leading to more frequent, more lengthy practice times, the actual figure may be even greater today than it was 20 years ago.

Secondly, there may be an increasing tendency among children to categorically regard large group, large muscle competitive games as "sports." This may reflect an increasing importance to the child of adult organized "sport" relative to child-directed "games." Eifermann (1971) has noted that with age there is an increased tendency for children to use the word "just" to qualify playful non-sport-related behavior (e.g., "<u>just</u> playing catch"). While reflecting general trends toward the increasing sophistication of children, this tendency may be coming at an earlier and earlier age. In any case, common parlance among children would probably indicate "ball game" to mean an organized "sport" event. Thus, another purpose of this analysis is to examine the relationship between game and sport participation and to look at them conjointly in terms of impact on child development and socialization.

<u>...., Motherhood, and Apple Pie</u>

It is important to strive for some amount of objectivity in this analysis. A well-practiced maxim is to avoid talking about religion or politics with family and close friends at the risk of doing those relationships irreparable damage. Sports can be added to that list in many cases; the devotion to our national pastimes runs deep in the American spirit and often times defies the controls of rationality. (See Novak, 1976 for a comparison of sport and religion.)

Competition and competitiveness are concepts which alone elicit a great deal of ideological and emotional response, but with all of its visibility, the area of organized sport is often the focus of controversy over these ideas. Proponents of organized sport for children usually see

in it an enculturative potential (e.g., Hale, 1976), i.e., the potential to prepare people to fit into larger economic, social and political roles. With ideological emphasis, prevailing folk wisdom has it that personal and moral character, leadership, cooperation, coping strategies, risk taking and achievement behavior are all readily developed in the sport context.

Opponents attack sports with the arguments that competition may be dehumanizing (Sadler, 1972; Scott, 1974). They argue that when winning is stressed players learn to regard opponents merely as obstacles to their success. Among the critics are three distinct groups: (1) members of the athletic establishment, professional athletes and ex-athletes who use their credibility to speak out from experience (e.g., Shaw, 1972; Meggessey, 1970). (2) journalists (e.g., Ralbovsky, Byrn, 1974; Stevens, 1976); and (3) a small number of academics with training in psychology and/or physical education (e.g., Tutko & Bruns, 1976; Orlick, & Botterill, 1975).

Although the writings of these people should be examined in the process of evaluating sports, this paper will deal primarily with empirical evidence from investigations of games and sport participation and also with the implications of the work of social scientists who have investigated what may be regarded as the "elements" of games and sports (e.g., competition, rule making) as they affect social development.

With regard to the question of competition in general, research has indicated that compared with children in other cultures, American children more readily evidence what the investigators refer to as "irrational competitiveness" and even "sadistic rivalry" in experimental tasks where cooperation is the only adaptive, intelligent response (Madsen, 1971; Avellar and Kagan, 1976). Their explanation for this and for the fact that even retarded children do better on some cooperative tasks than "normal" American children (Madsen and Connor, 1973), is that there is such a cultural emphasis on winning by minimizing the gains of one's opponent that to do otherwise is at most times inconceivable. It follows that organized sport may be a cultural agent that perpetuates such maladaptive competitiveness (Sadler, 1972). But the assumption of inordinate competition in sports may be unwarrented. There is, after all, a significant amount of cooperation required within the team structure to effect success against opposing teams with whom competition is established. The defining characteristic of the events may even fit Sherif's notion of a "superordinate goal" (1956), i.e., one which cannot be achieved without cooperation and interdependence.

Structural characteristics of games and sports and the effects of adult intervention will also be a focus of the present analysis. An argument that will be examined closely is the potential for 'self-development' in child-directed games. A premise for this approach is captured by Avedon and Sutton-Smith (1971) in reference to the work of Redl and Wineman (1951) on "Children who Hate":

> ".....if we expose them to program opportunities which involve activity and aggression, they can rarely take them without much interference from the adult to "keep things going"

> and to "avoid the worst." This is, however, where the worst aspect of the problem hits us directly in the face; for remember, these are also the "children who hate." This means that adult interference rather than being considered a welcome help, is rejected or reacted to with fury and counter attack and even the helpful attempt at umpiring to make a game possible is usually interpreted simply as hostile meddling of an enemy from above." (p. 431)

While their subject group may be atypical, we would do well to consider their insights and suggestions for further research:

> "What a wonderful aid in our predicament! If we could only find enough such activity structures with their natural group codes encrusted around them, then we could really "stepout for a while," and let the built-in behavior codes of the games in question do the controlling...We wished there were organized research on this. As it is, we had to worm our way through trial and error and through frantic efforts of "game analysis" and the terms of "native group code relevance." Our findings are still deplorably thin compared with what we think can be found in the uranium mines of further psycho-sociological research, were we only given a chance to exploit them. (p. 431)

This report will continue with (1) an analysis of the underlying motives for participation in games and sports; (2) a review of existing theory and research on the role of both games and sport in personality development and social adjustment; (3) an examination of the function of the elements of both games and sports (e.g., rule formation, competition, modeling) in socialization; (4) the generation of testable hypotheses which follow from the preceding analysis; (5) a description of procedures used to test these hypotheses; (6) presentation for practice and further research.

This will not be like a typical research project. The research to be reported (procedures and results) will, by itself, be a very modest attempt to empirically investigate some aspects of the problem. The discussion of the problems in the next few sections provide suggestions for a much greater analysis.

## SOCIAL MOTIVATION IN GAMES AND SPORTS

### The Play Motive

Basic to both games and sport is the desire to play. Among the numerous explanations offered for "why people play" the biological needs to maintain optimal arousal and process information are the best supported (Ellis, 1973; Berlyne, 1968). When arousal is relatively low and children are reasonably comfortable, they take pleasure in activities that create new experiences, i.e., information flow. In every-day behavior this is translated into a pursuit of moderate but not overwhelming "challenge" (Eifermann, 1971). With greater mastery over the environment a child manipulates and experiments to create new challenges, but the sense of play is maintained to the extent that control is maintained and there remains pleasure in the activity itself (i.e., it is intrinsically rewarding).

This process continues in the context of sport to the extent that is is not undermined by an emphasis on extrinsic consequences. The evidence of "professionalization with age" in sport (Webb, 1969), a focus on the products rather than the process of activity, suggests that sport may cease to be play, but at least initially the attraction to sport also involves the inherent tendency to seek arousal and challenge. And to the extent that a sport participant attempts to match abilities with commensurate environmental demands, the intrinsically pleasurable aspects of play are retained (See Csikszentmihalyi, 1975). There is, however, another aspect of play which becomes increasingly attenuated in sport, the characteristic of divergent thinking, a sense of separation from 'the real world,' or what Huizinga (1955) calls "disinterest." While the structure of a game imposes constraints (in the form of rules and roles) on this process, a separation from 'ordinary' reality is very much a part of it. While a game is often a simulation of reality (one that has some enculturative value, as we will see in the next section) it is still a transformation of reality with the intent to establish boundaries where they otherwise do not exist. To the extent that the child retains the power ("voluntary control") to modify and manipulate the games context, the "unreal" aspect of play is retained. In sport, which is often very "real" in its consequences, the play motive must be considered as secondary.

Watson (1976) has recognized a variety of social motives in children's games (while not distinguishing games from sports). As a result of doing a similar, though more exhaustive literture review, he identifies four motive clusters: social reciprocity (cf., Mead, 1962; Piaget, 1932), intrinsic motivation (cf., Goffman, 1961) achievement mastery (cf., Eifermann, 1971; Sutton-Smith, 1971), and extrinsic reward. Although he endeavors to demonstrate that intrinsic rewards are a part of organized sport and indeed finds some evidence to support this position,[2] it is clear that it is in the area of extrinsic rewards and to a lesser extent

[2]The recent work by Fine (1978) should be added to this point. He found that overwhelmingly, participants in little league baseball say they enjoy it (though the basis of that enjoyment remains a question).

the emphasis on mastery and achievement where sports are most distinguishable from games. With respect to extrinsic motivation, parental approval, social mobility and tangible rewards are consequences which are always possible while mere participation is likely to bring social status (Buchanan, Blankenship & Cotton, 1976). The area of achievement/mastery is the one which requires the most careful scrutiny with respect to the purposes and effects of games and sports, for it is also integrally related to the concept of the competition, as will be demonstrated in the next section.

Whether the rewards are intrinsic or extrinsic to the participation, the following newspaper story (Child, 1978) should indicate much of the attraction that organized sport has for children:

L. L. CROWN TO DODDSON

> "It was Jeff Schumacher's favorite dream. His Doddson Travel teammates had loaded the bases. The pitch he hit traveled over the fence for a grand slam home-run.
>
> In the dream there is no manager to pinch hit for Schumacher. No substitute is afforded the chance to steal his glory. No one will rain on Jeff Schumacher's parade.
>
> But with one out Saturday and in the sixth and final inning, with the bases loaded, Doddson manager Bill O'Donnell gave thought to pinch hitting for Schumacher.
>
> Serious thought. His team trailed Huey's by two runs and Schumacher had struck out in his last five times at bat.
>
> At the last moment O'Donnell did not. Let it be said he and Jeff Schumacher shared divine vision. Three pitches later, with the count one ball and two strikes, Schumacher's drive carried over Centennial Field's outfield fence to carry the Robeson's league last place finishers to a five to four victory in the championship game of the Twin City League tournament.
>
> 'I though I'd never hit the ball over the fence,' meaning in a lifetime. 'I was trying to get a base hit.'
>
> "I've always dreamed,' Schumacher said, 'of hitting a home run with the bases loaded.'" (Champaign News-Gazette).

Achievement Motivation and Competitiveness

The idea of seeking challenges, previously discussed as a basic component of play is central to models of achievement motivation (White, 1959; Harter, 1977 ; & Atkinson, 1964); and to the notion of "contest"

as well.[3] However, the contest requires, in addition, the ability to recognize that the challenge is shared, hence the ability to take the other's perspective. Children gradually develop this ability through structural changes in their thinking which involve the reduction in egocentrism (See Damon, 1977). Such changes make cooperation and competition possible and thereby provide the basis for the contest. Thus, the "testing" property of early play becomes a shared testing with the others behavior toward a mutually understood object serving as a basis of evaluation of one's own behavior or performance.

Games, with limitations and boundaries, take advantage of this natural course of development; while providing an opportunity to test physical and mental skills, they challenge social understanding, they provide a context for social testing and they limit the situation to that which is manageable and to that which is relatively inconsequential. As Peter and Iona Opie (1969) note about children in game play:

> "They like games which move in stages in which each stage, the choosing of leaders, the picking up of sides, the determining of which side shall start, is almost a game in itself. In fact, children's games seem laborious to adults, who if invited to join in, may find themselves becoming impatient, and wanting to speed them up. Adults do not always see, when subjected to lengthy preliminaries, that many of the games particularly those of young children are more akin to ceremonies than competitions."

The fact that this context allows not only for the testing of one's physical or cognitive abilities, but - in the process of game construction - for the testing of social skills as well is central to the enculturative values of games discusses by Mead (1961) and by Roberts and Sutton-Smith (1962). Since these perspectives will be developed further in the next section, suffice it to say here that the attraction of games may have a great deal to do with achieving some measure of social competence in the larger society.

While it will be apparent that organized sports are structurally different to the extent that adults control and maintain the process, it is argued that the opportunity to test oneself against others is a basic motivation to participate, and, depending on how it is done, may contribute significantly to generalized achievement motivation (Martens, 1976; Scanlon, 1978). Based on the writings of Veroff ( ), those who take this approach make a distinction between the "normative" and "informative" functions of achievement behavior in sport. The normative function has as its goal a relative standing irrespective of one's actual achievement, while the informative function of achivement behavior, social comparison, and competition is to provide feedback about one's performance and ability.

While Martens (1976) and Scanlon (1978) argue that emphasis of the normative function of competition in sports is an aberrant of "nonintegrated"

[3]The word contest, inclusive of both games and sports, derives from the Latin words "con and testare," literally, "to try together."

(immature) achievement behavior and that the informational function is basic to healthy competitiveness in sport, it can be argued that the balance of these two tips toward the normative fundtion primarily because of the consequences involved in sport participation. In other words, although one may have a need to achieve that requires and utilizes social comparision to provide information about abilities, the overwhelming influence of social and cultural pressures to succeed, win and be "#1" makes achievement motivation in this context ("competitiveness") more normative than informative in function. Some support for this comes from studies of attribution of success and failure in children's sport (e.g., Roberts, 1976). The extent to which unrealistic "ego-enhancing" attributions are used to explain winning and losing ("We won because of my ability." "We lost because of bad luck"), success and failure can be seen as a reflection less of interest in accurate information about abilities and limitations than of an interest in relative position. By neglecting the social milieu of organized sports, Martens and Scanlon have largely missed this point.

The idea that sport situations are inherently attractive to children of high need achievement, must be suspect for similar reasons. When a game is organized by participants themselves, equality of opponents is of tantamount importance. Balance between opposing forces is sought to maximize uncertainty of outcome which is then the basis of optimum arousal and enjoyment. The challenge presented to a participant then is that of an even (50/50) chance of winning which can be translated into the "moderate" challenge sought by individuals with a high need for achievement (Atkinson & Reitman, 1958). While this same value is endorsed in organized sports, both by participants and spectators, as the element that makes the contest most exciting, when the matching of teams and individuals is prearranged, that optimum balance is rare. And when children do not have the opportunity to modify the conditions in such a way to better match their abilities with the demands (as might be done in child directed games by re-choosing to equalize teams), they submit to conditions where, in many cases, success or failure is much more predictable (less uncertain). Several things can result where the "challenge" is missing. A child who wins or dominates consistently may find it so reinforcing that "favorable matches" (against inferior opponents) will be continually sought; or, alternatively, the child may simply become bored. A child who fails consistently on the other hand, may become anxious and subsequently afraid of failure or may become frustrated, resentful and angry, or may become depressed because of his or her inability to change things.[4]

In any case it is important to note that those who categorically become "winners" and "losers" are born of inadequate games, those in which the "game," hence the uncertainty, is not freely protected. Given an opportunity, children, especially those with high need achievement, will choose teams and arrange games in such a way that the challenge, the 50% chance of winning and the moderate risk of losing, is maintained. To the extent that winning becomes overly important and losing totally intolerable the behavior becomes conservative - defensive, and the evaluation which is sought is normative rather than informative. Whether it be in games or sports, if a child focuses on personal performance adjusted to realistic expectations in the

[4]The "learned helplessness" model provided by Martin Seligman (1975) gives us a paradigm with which to examine this effect.

existing conditions, the effects will be instructive, but where winning and losing is an either-or proposition and where social consequences are significant, the outcome is usually the primary focus and personal performance is likely to be of secondary significance.

With the importance that the products of performance have for children and with the training value that sports may hold for the "achieving society," other motives for participation should be considered. While they may be part of the achievement/competence motive complex, power, dominance, and status needs should all be recognized as potentially important to the participant.

It is important to note that the motives described in this section are reflected in a vast number of combinations in both games and sports. The conditions which support a high need achievement in the little league baseball player (Scanlon, 1978) are likely to be quite different from those of one who is attracted to the context more for social involvement. The child who prefers the child-directed games to organized sports because of a fear of failure probably comes from a very different set of conditions and has a different set of needs than the "child athlete" who can be characterized as "neurotically competitive" (Horney, 1937) or "sadistically rivalrous" (Madsen, 1971). This argues for the use of the interactionist perspective (Endler and Magnussen, 1976), taking individual differences as well as the situation into account in analyzing motivation and personality in children's sports. But these individual differences not withstanding, we shall proceed to examine the general effects of the two game contexts.

## GAME PLAYING IN PERSONALITY DEVELOPMENT AND SOCIAL ADJUSTMENT

Before attempting an examination of the effects of games, it should be noted that the significance of games in socialization is suggested by the evidence that they are a reflection of cultural conditions. Games apparently work for children as "expressive models" of the culture (Roberts & Sutton-Smith, 1962), and as such are also manifestations of the limitations of age. Callois (1961) has identified "mimickry" as a major category of play where "the aim is to imitate adults" (p. 21). According to Seagoe (1971) cultures can be differentiated on the basis of political structure by looking at children's games. Individualistic democratic countries evidence informal play and play with adults to a greater extent than monolithic, authoritarian countries which typically have more group competitive play. The work of Roberts and Sutton-Smith (1962) has also indicated that children's games differ systematically with the cultures.

Developmental age is also reflected in both the complexity and the content of games. Participation in games generally requires the mastery of certain cognitive and social skills. Several writers have offered "stages" of game involvement. Seagoe (1970) has argued that play type moves with emotional/social development from informal-individual to adult-oriented to adult-imitative to individual-competitive to cooperative-competitive with age. The Opie's (1969) note changes in the content of games from fanciful to ritualistic to romantic to competitive between the ages of 5 and 15, with each stage reflecting an increase in accommodation to social structure. Piaget's observations lead him to similar conclusions (1932, 1962). He saw, in changes in children's play with rules, a movement from heteronomous morality where rules were seen as adult-imposed conventions that were unchangeable, to autonomous morality where rules of games were seen as modifiable, negotiable, and personally relevant (1932). More generally he argued that games increase in number both absolutely and relatively with age, the more accommodative play of games replacing the more assimilative, symbolic play associated with the immature mind (1962).

A couple of investigators have taken issue with Piaget however. Eifermann (1971) provides data indicating that games decrease between ages 11 and 15 both absolutely and relatively while some kinds of practice play increase. She explains the difference on the basis of her broader definition of games (which includes cooperative ones) and the fact that the increase in competitive games and practice play reflects the increasing interest in the "challenge" factor in play. On the other end of the age range, argument comes from Denzin (1975) who uses illustrations from the play of very young children to demonstrate that self-structured, patterned interactive play (i.e., games) arises more as a function of "interactive experience" than cognitive maturity.

While most of the foregoing indicates games to be reflective of both developmental stages and socio-cultural processes, there are strong arguments with some amount of empirical support that game playing in childhood actually affects these processes as well, contributing directly

to socialization. The most well-known of the "anticipatory socialization" models is the "conflict-enculturation" hypothesis proposed and supported by Roberts and Sutton-Smith (1962). In their own words:

> The theory implies (1) that there is an overall process of cultural patterning whereby society induces conflict in children through its child training processes; (2) that society seeks through appropriate arrays and varieties of ludic models to provide an assuagement of these conflicts by an adequate representation of their emotional and cognitive polarities and ludic structure; and (3) that through these models society tries to provide a form of buffered learning through which the child can make enculturative step by step progress toward adult behavior (p. 486).

Results of tests of the theory have indicated that games of chance are frequently a response both to an emphasis in child rearing on routine responsibilities, and to a parent culture which is either religiously-oriented or economically and socially unstable. Games of strategy are generally preferred where obedience is stressed by parents and the culture, and physical skill games are found in cultures where there is an emphasis, at both the cultural and family levels, on achievement. With respect to the enculturative component, the "sociogenic" factor as Sutton-Smith (1971) calls it, it should be pointed out that advanced cultures give rise to all three types of games probably because they have all varieties of child-rearing emphases and cultural demands. To respond to this problem, Roberts and Sutton-Smith (1962) attempt to establish "subsystem validation" by looking at intracultural variation (between sexes and social classes) where they find further support for their hypothesis.

The idea of games as "anticipatory socialization" has been developed by others as well. George Herbert Mead (1934) saw in children's games the earliest opportunity to experience the "generalized other" on one's own terms, to react to it in a prescribed role and to become aware of one's self by the way "it" reacted in return. According to Mead, the game is one of the child's first encounters with social order and with the construction of social reality. His perspective is further elaborated by Denzin (1975) who sees "the acquiring of skills requisite to future interaction" as basic to social play.

While focusing primarily on the reflection of cognitive development in children's games, Piaget's views indicate the instrumental value of games for enculturation as well. Considering role-taking and rule-making he asks:

> "Will not cooperation between adult and child, insofar as it can be realized and insofar as it is facilitated by cooperation between children themselves, supply the key to interiorization of commands and to the autonomy of the moral consciousness?"

The voluntary nature of anticipatory socialization in game playing should be recognized. Sutton-Smith (1971) refers to games as "buffered learning experiences" where children "play with power" on their own terms by entering into voluntary opposition. Peter and Iona Opie (1969) put it thusly:

> "It appears to us that when a child plays a game he creates a situation which is under his control, and yet it is one of which he does not know the outcome. In the confines of the game there can be all the excitement and uncertainty of an adventure, yet the young player can comprehend the whole, can recognize his place in the scheme, in contrast to confusion of real life, can tell what is right action. He can, too, extend his environment, or feel that he is doing so, and gain knowledge of sensations beyond ordinary experience. As long as the action of the game is of a child's own making he is ready, even anxious, to sample the perils of which this world has such plentiful supply (p. 3).

While specific research on the actual effects of game playing is still largely lacking, a couple of studies are noteworthy. Sutton-Smith, Crandall & Roberts (1971) hypothesized that since games are models of decision-making in the larger society, then strategic competence in games should be related to competence in other situations. While the results indicated that game style may be a measure of competence less convention-bound than are traditional need-achievement tests, the question of the training value of such experiences for competence and achievement motivation remains to be answered. Studying sex differences in children's game play, Janet Lever (1976) notes that boy's social play is characterized by more complex social interaction and greater investment in the process than girl's games, and she suggests that these experiences may contribute differentially to the ability to occupy more flexible and socially demanding adult roles. Lever sees games as instrumental in independence training, the acquisition of organizational and leadership skills, and the development of competence with competitive strategies. While Lever might find some solace in the evidence of Sutton-Smith and Rosenberg (1961) that girl's games are becoming less differentiated from boy's (i.e., that girls are playing traditionally "masculine" games relatively more often than "feminine" games) the effect is lost if their evidence that games are generally declining in number is in fact, valid.

In one of the few studies of actual correlates of game playing, Michael Inbar (1976) related frequency of game play in various categories (physical, cognitive, individual, group) with measures of social development and adjustment. In general, he found positive social adjustment to be related to an "optimum" amount of game participation. A great amount or very little participation in games was associated with lower scores on various social adjustment variables. He also found some evidence that variety in game participation is important.

In sum, while the evidence to support the instrumental value of children's games in personality and social development is sparse, the theoretical arguments for such are strong. In view of the alleged decline in child-directed games - which may or may not be inevitable and unchangeable-a closer look at the actual effects of game participation would seem worthwhile.

## SPORT PARTICIPATION AND PERSONALITY/SOCIAL DEVELOPMENT

In contrast to the literature on child-directed games, there has been no shortage of attention to the role of sports in child development; but the research that has been done has been criticized by a number of people (e.g., Ash, 1977; Stevenson, 1976; Sherif, 1976) and for a variety of reasons. One common problem is the inference of cause and effect from correlational data. Failing to recognize the possibility that sports often selects for certain characteristics, numerous investigators seem ready to attribute the differences found between participants and non-participants, athletes and non-athletes, to the actual experience. A related problem is that of sampling. Control and comparison groups are often assembled from individuals who may not be involved in anything comparable. Thus, the effect of sport cannot be separated from the effects of structured association in general (Sherif, 1976). The need to identify the influence of the situation itself on personality, i.e., the interactionist perspective, has also been neglected in most of the research that has been done. Other problems include generalizing from one sport to all, failure to separate factors of participation, the use of global measures of adjustment, and the tendency of devoted ideologues to attempt to prove the obvious (Sherif & Rattrey, 1976). With these limitations in mind we can proceed with the review.

This review will also be limited to those studies that deal with children. As was stated earlier, beside helping to narrow the topic somewhat, focusing on children is justified because the experience of sport in childhood, where so many critical cognitive and social abilities are being formed, probably has very different consequences than would be necessarily true of the experience in adolescence and adulthood. For the effects of high school and college sports, the reader is referred to reviews by Cowell (1960), Stevenson (1976), Oglivie & Tutko (1971), Schendel (1965), and Snyder & Spreitzer (1978).

With respect to children, much has been said about the value of sports for "character development." While character development has never been adequately operationalized, no less analyzed, a distinction between personal character, emotional stability, and moral/social development might enable us to proceed with the analysis.[5]

### Personality Development in Sport

Early attempts to determine the effects of little league baseball on adjustment (Dickey, 1966; Skubic, 1956) have failed to show significant differences in personality and adjustment between participants and nonparticipants; but as Ash (1977) and Stevenson (1976) have pointed out, global measures such as were used are not likely to reveal effects. Among the specific traits that have been suggested as possible consequences of sport participation are self esteem, independence and leadership.

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[5]With a focus on social adjustment, emotional adjustment will not be dealt with in depth here, but strong criticisms of the "pressure" in organized sport indicate it as a primary research area. As a point of interest, existing evidence (Skubic, 1955; Hanson, 1967; Simon, 1978) indicates that the stress involved may be no greater than in comparable performance oriented settings.

In a study by Seymour (1956), among many nonsignificant differences, was the finding that participants showed greater increases from beginning to the end of the season on peer ratings of leadership. Independence as a concommitment of sport participation is suggested by evidence reported by Lynn, Phelan & Kiker (1969) indicating that team sport participants had a more internal locus of control than nonparticipants. It is important to note, however, that the group was a bit older (12-15) than little league age and in any case might have been different in that respect prior to participation.

Self-esteem, a positive self-concept, is often seen as a consequence of activities that provide experience with success and a sense of competence. Thus, it follows that people endorse organized sports to the extent that they believe that it can provide such experiences. The evidence on the question is once again limited. One exploratory study (Maul & Thomas, 1975) found no differences in self esteem between child gymnasts and nonparticipants,[6] but anecdotes like the following (Wynne, 1978) are quite common:

> "A colleague of mone has a ten-year-old son who tends to overeat, and who has been killing a lot of time over the summer. Suppose any of us had the intellectual problem of conceptualizing a social system that would cause the boy to voluntarily become involved in more purposeful activities and to control his diet? What would we propose? Generally, one might assume that any such system would mobilize parent and community support invite the boy to participate in prestigious and demanding activities, bear a rational relationship to a progression towards more mature roles, and involve traditional symbols of elevated status (e.g., special garment, conspicuous forms of ceremonial praise).
>
> The "solution" was that the boy decided to try and join a community little league type football team. In order to meet their weight ceiling he had to cut his weight from 96 to 88 pounds, and has so far, two-thirds succeeded (to his parents' joy). He has promised the coach to get all the way down. He regularly shows up on time for practice, which will take three or four hours a day, six days a week, from early August to October.
>
> --there is a dramatic difference between being on the team and off of it. Sustaining that difference takes a lot of adult time and work, in supplying coaching, uniforms, audiences, playing fields and schedules. But that work creates a stage on which boys want to shine. And the stage changes showing up at practice and maintaining a diet, from simple drudgery to part of a potential progression to precious recognition.

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[6] It may be worth noting that the "nonparticipants" in this study may have been involved in other activities.

The importance of the reaction of others in the formation of self-concept is well established (Mead, 1934; Coopersmith, 1967). Thus, in addition to focusing directly on self esteem, we should also look at the evaluation of participants by others. One group of investigators who took this approach (Buchanan, Blankenback & Cotton, 1976) found that the well-known relationship between popularity and sport participation established by Coleman (1961) in his study of high school students exists with fourth grade children as well. It should be apparent to the reader then that personality development is dependent upon social factors as well, and with that we turn our focus to the social consequences of the experience.

Moral Development and Social Adjustment

Criticism of organized sports for children has often focused on the cost in human relations attributable to excessive emphasis on winning (Orlick & Botterill, 1975; Tutko & Bruns, 1976). The evidence for such is largely anecdotal and the question of whether social destructiveness is characteristic of children's sports or is the exception remains to be effectively determined. The quality of parent and coach involvement may be the determining factor (Martens, 1976). Coaches who are good models, who are themselves fair and honest, who do not try to manipulate conditions in the interest of winning, will probably have a more positive impact on moral development than will a coach who lacks these qualities and attempts to "win at all cost." While there exists no substantial evidence in direct support of this point the work on modeling (See Bandura & Walters, 1963) would predict this. Another principle that "good" coaches may effectively use is the "reinforcement" of socially positive behaviors demonstrated by players (Martens, 1976; Chisum, 1976).

While the extent to which coaches do in fact make use of modeling and reinforcement is debatable, there currently are coach training programs under development that have this as an objective (Smith & Smoll, 1978; Martens, 1978). It should be noted here, however, that under the best conditions moral development in the context of sport may be limited by the fact that children do not make decisions and, indeed, adults are in control. Cognitive psychologists especially (Piaget, 1932; Kohlberg, 1967; Damon, 1977) discuss the importance of dealing actively with moral dilemmas and resolving conflicts as necessary experiences for movement to higher levels of moral reasoning.

With respect to social adjustment we come immediately to the fact that under a variety of circumstances, competition leads rather directly to aggression (Berkowitz, 1972). While we will examine this idea more thoroughly in the next section on elements of games and sports, the evidence directly pertaining to sports should be examined here. Using a semiprojective technique (binocular rivalry) Duthie and Guilmette (1975) determined that the more competitive twelve-year-old, all-star hockey players were more "ego-involved" with hostile slides than the less competitive "houseleague" class players of the same age. Moving from the laboratory to a field setting, in the famous "robber's cave" experiment, Muzafer Sherif and colleagues (1956) found that the ball games between

opposing groups of campers only exacerbated hostility. There is also evidence indicating that losing creates even more aggression (Gelfand & Hartman, 1978), although Burchard (1978) found that "checking" in youth league hockey was not affected by losing. And a counterpoint is Scott's (1969) argument that dealing with frustration in the context of sport may actually teach the control of aggression. Obviously more work is needed on this question as well.

The topic of sportsmanship has also been examined in relation to children's sports and the results are equivocal. Burchard (1978) found that with youth hockey teams, ratings of referees after games were generally negative regardless of outcome, but the ratings of opponents on sportsmanship were usually quite positive.[7] Kroll & Peterson (1965) and McAffee (1955) found athletes to be less sportsmanlike in response to value-type stories than nonathletes. The experience of participation and increased involvement in sport has also been associated with a gradual decline in the relative value that participants place on "fairness" (in comparison to "winning" and "playing well") as an important aspect of the sport endeavor (Webb, 1969; Mahoney & Petrie, 1972; Mantel & Vandervelden, 1974).

The preceding account of the research on the effects of sports and games in childhood indicate that while there is much discussion, meaningful evidence is sparse. However, the elements of games and sports - role-taking, competition, cooperation, rule-making, etc. - have been rather thoroughly examined in game-like situations. While there are limitations to extending the results of this research to actual game/sport experiences and advantages for studying these phenomena naturalistically (Burchard, 1978), the studies that have been done in laboratory settings should be examined for the purposes of developing more specific hypotheses. Caution should, of course, be exercised in the interpretation of these findings vis a vis games and sports. The next two sections are designed to achieve this effect.

[7]Although it should be noted that Burchard deals with the problem of 'response set' directly, it seems quite likely that the promise of a "sportsmanship trophy" at the end of the tournament probably effected response tendencies and response veracity.

ELEMENTS OF GAMES AND SPORTS IN PERSONALITY DEVELOPMENT AND SOCIAL BEHAVIOR

Role-Taking

To reiterate the definition given earlier (pg. 1) a formal game is "an exercise of voluntary control systems in which there is a contest between powers, confined by rules in order to produce a disequilibrial outcome." (Avedon and Sutton-Smith, 1971). While we will return to selected aspects of this definition in the following sections, the idea of "powers" expressed therein implies, in most cases, the taking of roles. The importance of role playing to the development of self concept and the understanding of social reality has been discussed previously in reference to the work of G. H. Mead (1934). What other effects it may have is a matter of extrapolation.

Laboratory studies have indicated that children who play the roles of helpers and victims are more likely to give subsequent aid to someone in distress and to share with others as well (Staub, 1971). In reviewing theory and research on empathy, Smither (1977) notes that role taking creates the "as if" condition that is necessary to understand and feel for another.[8]

Whether the role-taking that occurs in sport and games would lead to any of those effects demonstrated is a question needing research. It could be argued that the roles that are taken are not "needy" in the same way that the experimental roles were, but the awareness of what it feels like to be "fouled" when one is in a position to do the "fouling" may be similar. On the other hand, such behavior may be merely accomodative, done out of self interest ("you may scratch my back, I'll scratch yours") rather than based on any felt understanding of the others' viewpoints and feelings.

If there are any such effects they may not occur to the same extent in both game and sport contexts. For example, the interdependence and cooperation necessary to maintain games may engender sympathetic understanding and support (See Sherif, 1956; Aronson, 1975; Johnson & Johnson, 1975) but the values of competition, achievement and independence lead to a decrease in such effects (Bryan, 1977). These points will be reconsidered in subsequent sections.

Rule-Making

Morality, according to Piaget, is essentially a system of rules (1932). Rule-making is an activity that is found in the context of child-directed games while being largely absent from children's experience in sport organized by adults. Within child organized games, the opportunity to invent and develop games varies greatly, but problems of interpretation and possibilities for modification of rules exist in nearly all games depending especially on the age of the child.

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[8] The development of such abilities is in part a function of the natural decline in egocentricism that occurs after around age six.

In his famous "marbles study" Piaget (1932) noted that younger children regard rules as relatively unchangeable and as being transmitted by adults. He associated this view with a "heteronomous" morality, or a morality of constraint. But as children are able to take the perspective of others they begin to see rules as modifiable through mutual consent. Thus, they develop an "autonomous" morality of cooperation. While Piaget says nothing specifically about the value of repeated experience with rules in childrens games, he implies that it is that part of the game experience that is most important to children:

> "mere competition is not what constitutes the affective motive power of the game. In seeking to win, the child is trying above all, to contend with his partners while observing common rules."

In replicating Piaget's study with basketball rules, Jantz (1975) found a "morality of constraint" in rule interpretation to be persistent into later ages than did Piaget. Jantz attributed this to the more adult structuring to be found in basketball and concluded that "as adult influences upon children and game situations lessen, higher level decisions tend to be made." As was noted earlier, the "fairness," as a value of games, declines in importance with increasing experience and involvement in organized sport (Webb, 1969; Mahoney & Petrie, 1972; Mantel & Vandervelden, 1974). This should be considered again as an important point of distinction between sport and game contexts.

An important experiment that relates more directly to the question of rule making was done by R. L. Merchant and Freda Rebelsky (1972). They suggested that movement to a morality of cooperation requires give-and-take experiences and that participation in rule-making processes is a critical variable:

> "it is a short step ... from the idea that rules can be made by and for people, the products of group agreement. . . to the conclusion that rules can be changed by people for cooperative purposes."

With care to avoid undue influence, they compared a group of ten year old children who had the opportunity to make up rules with others who had no such experiences on response to questions about rules in other contexts. The ones with experience in rule-making showed a higher level of moral reasoning on "fairness" questions in other contexts. The authors ask, "Could differences in childhood participation in rule-making or more broadly, decision making, have effects on flexibility of adult morality?"[9]

## Decision-Making

While rule-making is a type of decision making that may have important implications for moral development, other kinds of decisions are made in the context of children's games and sports. Questions of inclusion and exclusion

[9] The ideological counterpoint here is, that moral rectitude rather than flexibility is needed in adulthood. Thus, we return again to value positions.

of individuals, which roles individuals should take, and which strategies should be employed are resolved by children in the game context, and rather exclusively by adults (coaches) in the sport context.[10] While children have differential power based on a number of things (to be considered in the next section on leadership), what particular strategy to use in a given game situation is generally an individual decision.

The concept of "strategic competence" (Sutton-Smith, Crandall, & Roberts, 1971) discussed earlier should be reconsidered in this light as should the analysis of sex differences in social competence made by Janet Lever (1976, 1978). The value of decision making for children has been promoted consistently in educational reform movements (e.g., Walberg & Thomas, 1971). Self-esteem, independence, and positive attitude toward the activities are usually identified as consequences. A study of the play of preschool children (Huston-Stein , Friederich-Cofer, and Sussman, 1977) found that in more structured, adult-directed activity programs children were more attentive and orderly and less playful, friendly, helpful, and cooperative with their peers than others in low-structured classes. Interestingly, they found no difference in task persistance; which is a rationale for imposing adult control and supervision.

While there are obvious parallels between adult control in schools and in sports, the justification for such in the latter case is based upon the belief that children in that context need to learn to follow orders. Further there is some question about their abilities to make the majority of decisions in the sport context; but in the few experiments where children have been given an opportunity to make decisions about such things as practice times, practice routines, and game strategies, positive consequences in terms of self-concept, attitude toward the activity and even performance have been demonstrated (Veen, 1972; Martinek, Zaichkowsky & Cheffers, 1977). In the Martinek, et al. study, a teacher-directed (vertical) model was compared to a student-sharing (horizontal) model in the learning of motor skills, and while the latter was found to contribute more to self-concept, the former led to greater progress in skill development. But in the Veen study where the skills were applied in a sport context, performance favored the horizontal model as well.

One question that inevitably arises with respect to child-directed games is the extent to which decision making is controlled by coercion, i.e., authoritarian leadership by the most dominant. Such concerns are frequently the result of observations of bullying that occur in free-play groups especially age-heterogeneous ones. But such events are more likely to disrupt than maintain a game, which is, according to Sutton-Smith's definition, "an exercise in voluntary control" and which depends on principles of fairness and mutual consent. Thus, while a leader - the head decision maker, the captain, etc. - is usually the more skilled participant, it is the understanding and skilled interpretation of rules and the insistence on protecting the inherent values of the game that give him/her legitimate authority in the eyes of others. If control by this individual becomes malevolent or based on

[10] While this is a thesis that should not go untested, it is supported by personal experience, observation and communication with others in the field.

self-interest, that authority is lost and seeds of rebellion are sown. (For further discusion of children's responses to peer authority, see Damon, 1977).

Conflict Resolution

The process of conflict resolution follows directly from discussions of rule making, decision making and leadership. While conflicts over rules, interpretations and procedures are generally resolved by adults in the organized sport setting, the process falls to children when adults are not around. Comparing free play on playgrounds with formal physical education classes, Polger (1976) found much more evidence of consensual decision-making as well as a greater amount of conflict in the free play settings. Conflict may lead to apparent chaos in such settings, and it is the observation of such social disorganization that often times leads adults to attempt to structure the experience (often to the relief of the children); but to the extent that game maintenance is a "super-ordinate goal" (Sherif, 1956) this process can be the basis for both better understanding in that context and the development of social skills that can be generalized (See Sherif, 1956; Lever, 1976, 1978 and Devereux, 1976 for further discussion of this process).

While the conflict which is overt and observable receives the most attention, covert conflict may be even more important to social development. Kohlberg (1964) argues that progress to higher levels of moral reasoning depends on the resolution of internal dissonance arising from questions of justice and/or the inconsistency between beliefs and behaviors. Thus, while only the leaders or the most dominant may take a direct hand in the determination of whether a child should be included or excluded, for example, or how a disagreement over a rule violation should be handled, everyone involved can think about it in relation to their own beliefs, behaviors and social expectations. And this internal dialogue is likely to be more pronounced where responsibility for the situation is shared.

Cooperation and competition

Definitions of both games and sport have in most cases included the element of competition (Loy, 1969; Piaget, 1962). While such definitions have been criticized (e.g., Eifermann, 1971) for failure to recognize the great number of cooperative games that are played by children, perhaps we can stay with Sutton-Smith's definition of games put forth earlier, by noting that games and, sport have as their objective a "disequilibrial outcome." We can agree that most games, even cooperative ones, are attempts to utilize elements of luck and skill in such a way that one or more participants arrives at a more favorable outcome than others.

Nevertheless, it is important to note that this competitive essence of games does not preclude cooperation which in fact is also essential to the process. Consideration of competition as antithetical to cooperation fails to recognize - at least in the case of games - the extent to which intergroup competition requires cooperation within groups. Further, such a view fails to take into account the fact that to establish a competition

where the objective is agreed upon is an act of interdependence or cooperation by association of the two competing parties (Luschen, 1970). Thus, the matter of rule making and conflict resolution discussed earlier are part of an essentially cooperative process.

While such between-competitors cooperation is present at least symbolically in organized sport, the predefined nature of the activity requires far less interdependence than is needed to maintain the game in child directed activities. In this regard we return to the "robbers cave" experiment of Sherif and his associates (1956). In a camp setting, the experimenters noted that two groups naturally evolved, and to the extent that the camp structure kept them separate, inter group hostility was observable. Competition between them only exacerbated the differences and social events designed to ease tensions did not work to that end. What did work to bring the group together was a problem (a broken down trailer truck with a cargo of supplies that they all needed) which required the efforts of everyone to resolve. (Pushing it required everyone's strength). The investigators referred to the kind of structural condition that brings about the interdependence of two competing or conflicting groups as a "superordinate goal." The initiation and maintenance of a game which two or more people want to play is such a structural condition.

While there is less interdependence (between teams) in organized sports, there may be more of an emphasis on intragroup cooperation in the sport situation than in the game situation. This may be the result of either the coaches insistence and encouragement or simply the result of the desire for team success: but it is probably both. The idea of winning the game is a superordinate goal that may differ only in focus (on outcome rather than process) from that of the child directed game, but the consequences may be quite different, as well.

To look at the effects of cooperation and competition we can focus on interpersonal affect, anxiety, personal motivation and self-esteem. In a thorough review of the literature, Johnson and Johnson (1976) indicate that especially compared to cooperative structures, competitive structures in childhood create more anxiety, less security, more destructive boastful and depreciatory behavior, less liking, concern, and friendliness towards others, fewer feelings of responsibility to others and less encouragement of others. Citing other research, they explain the interpersonal effects with the simple notion that we like those who facilitate our efforts and dislike those who obstruct them, and they add that communication is more open and effective in cooperative settings. With respect to actual behavior there is evidence that competition leads to acts of aggression and hostility (Gelfand & Hartman, 1971; Rausch, 1965; Berkowitz, 1972), to a reduction in helping and other prosocial behaviors (Barnett & Bryan, 1974; Bryan, 1977; McGuire, Thomas, 1975) and is less effective in reducing prejudice than is cooperation (DeVries & Edwards, 1972; Aronson, 1976).

It should be noted that many of the studies that produced these effects were either in laboratory "game" situations or in the classroom context. Thus, care should be exercised in generalizing to natural game and sport settings. But in the case of studies like the Robber's Cave Experiment (Sherif, 1956), and to a lesser extent some of the comparisons made in the

classroom context, we have better approximations for the settings we are examining.

As was pointed out earlier, neither game nor sport settings are entirely competitive, but it is clear that cooperation is emphasized in different ways in each. Where adults are involved, the effects may be dependent to a greater extent on the adults (coaches and parents) behavior (Martens, 1976). For example, if a coach emphasizes and reinforces cooperation in practice and in games and minimizes the emphasis on beating the other team, the effects will be different from those of a coach who only focuses on the individual performances necessary to win; and the same can be said of the effects of parents. But we must return to the structural variables; the playing of a role in relationship to others (a position on a team), however competently performed, cannot be regarded as the same type of cooperation that is required when one faces an ambiguous problem as in the Sherif study (1956). Is there a different effect when cooperative behavior is clearly prescribed - than when a collective response must be arrived at by negotiated problem solving? At the same time we must ask whether the effects of competition will be the same when the importance of performance and the game outcome is radically different or when adults are present to manage the consequences. The suggestion here is that the effects of cooperation and competition in these settings however varied within each setting are likely to be very different between them.

Winning and losing

One question we can examine a bit further is how the outcome of a contest influences the effects of competition and cooperation mentioned earlier. In competitive settings winners are apparently less aggressive than losers but still less giving and more aggressive than children in non-competitive conditions (Barnett & Bryan, 1974). In cooperative situation there is some evidence (Kennedy & Stephan, 1977) that failure increases antisocial behavior while success minimizes it. Rubenstein (1977) found that in an expressive noncompetitive camp situation self esteem increased over time while in a competitive situation an increase in self esteem depended upon whether there was actual achievement. The effects of losing consistently can also be predicted from the frustration-aggression hypothesis (Berkowitz, 1972).

Modeling

As was stated in the previous section, the behavior or parents and coaches can make a difference in the behavior of child participants in sport (Martens, 1976). While socialization effects can be the result of direct intervention and control, they can also be modeled. There is ample evidence that both antisocial behavior and prosocial behavior (helping, giving, sharing) are influenced by the presence of individuals who model those behaviors (Bandura, 1969; Bryan, 1977).

While peer modeling is equally possible the importance of the "power" of the model (Bryan, 1977) may give the adults more impact in both positive and negative directions. And although it might be assumed that the presence

of evaluating others (an audience of adults) might do more to minimize antisocial modeling than would be the case in child directed settings, the questionable behavior of the "observers" (Horn, 1977) suggests that this assumption be tested as well.

As Burchard (1978) has pointed out, one should be careful in generalizing to naturalistic sport and game settings from laboratory "analogue" studies. It is important, however to attempt to take this evidence out of the laboratory and test it in the appropriate situation. The following section is an attempt to move in that direction.

## HYPOTHESES

It would be possible to generate a large number of hypotheses from the preceding review, but the study which is to be reported on the following pages is a modest beginning and, therefore, the hypotheses are limited to the following:

Hypothesis 1: Participation in organized sports will be negatively related to participation in child-directed games. This follows from Devereux's suggestion that the reduction in children's games is probably due at least in part to the evolution of organized sports.

Hypothesis 2: Game participation will be more highly related to prosocial behavior than will sport participation. It is a short step from the moral development argument to the hypothesis that role-taking and negotiation experiences in children's games will lead children more readily to the empathy necessary for aiding and helping tendencies and less likely into antipathy and intolerance of others than will be the case with those who do not have such experiences.

Hypothesis 3: Participation in organized sports will be more highly related to self-esteem than will game participation. The popularity of organized sport and the prestige that participation brings are likely to be reflected in a more positive self-concept. (This also allows for the ultimate possibility that high self-esteem may be a prerequisite for participation.)

Hypothesis 4: Children in organized sport will be regarded as more persistent than other children. Those who remain with sports, especially those with some amount of failure experience will be in a position to have persistence reinforced.

Hypothesis 5: Participation in organized sport will be negatively related to tolerance for ambiguity while participation in child-directed games will be positively related. Children working through the ambiguity and confusion of the social process of game construction and game management will be better able as a result to accept ambiguity in general. Children in organized sport, on the other hand, will have the experience of adults taking care of loose ends and will be likely to be intolerant when things are not settled.

Hypothesis 6. Children in the child-directed games will show evidence of an internal locus of control while children with experience in organized sports will not. While it is reasonable to predict that a child with a substantial amount of experience directing their own games will feel more personal (internal) control of their own lives, the rationale for the prediction regarding organized sports is somewhat more complicated. A positive relationship would have been predicted on the basis of the relationship between achievement motivation and risk taking (Atkinson, 1964; Lever, 1978) but a negative relationship would be predicted on the basis of the reality of the control of "powerful others", i.e., adults. Thus, assuming the effects balance out, no relationship is predicted.

Hypothesis 7: Participation in organized sports will be related to machiavellianism. Machiavellianism is the belief that the ends justify the means, whatever they may be, and to the extent that organized sport emphasizes "winning at all costs," children may generalize this attitude to other situations.

Hypothesis 8: Game participation will be positively associated with measures of creativity. While games may be highly conventional, the effort that goes into constructing new games and modifying old games utilizes a substantial amount of divergent thinking. This hypothesis is predicated to a great extent on the relationship between playfulness and divergent thinking established by J. N. Lieberman (1977).

## METHOD

### Sample

The sample included male and female children from three elementary schools in St. Cloud, Minnesota. One of the schools, Garfield, was used primarily for instrument development. Another of the three was a "laboratory" school adjacent to a State University and the third was a relatively traditional elementary school in a middle to upper middle class neighborhood. In addition to a substantial number of children of University faculty the "lab" school also includes a large portion of disadvantaged children, making for a mean socioeconomic status comparable to that of the other two schools. It is atypical, however, in structure; it is, to a great extent, an "open" school without the grade demarcation of a traditional school. Instead, "Unit II" includes children roughly comparable in age to grades three and four of the other schools, and Unit III of the lab school can be equated with grades five and six. Table 1 is a breakdown of the children involved by school, grade and sex. Racially, the

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Insert Table 1 about here

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group is very homogeneous. Black and American-Indian children were present in numbers too small to be considered separately.

### Procedures for Data Collection

#### Instruments

The Behavior Rating Scale (Appendix A). This instrument is designed to elicit normative judgements from teachers about the social behavior of each of the children in their class. It is an adaptation of an instrument developed and used by Coopersmith (1967). As such no reliability data was established and the validity of it will be considered later in relation to the results.

The Sociometric Inventory (Appendix B). This is also an adaptation of other instruments. And like the BRS, it was modified for the purposes of the presnet study to measure specific social behaviors - in this case from the children's perspectives. Children were asked to identify the child (boys were asked about boys, girls about girls) in their group (class, circle, group) "who is most likely to..." The number of nominations a child received for each question was then used to establish a percentage of possible nominations the child could receive.

The SEMILOC (Appendix C). This was a composite of Christie and Geis' (1970) Kiddie Mach machiavellianism scale for children and the Intolerance

for Ambiguity Scale developed by Moos (1959) and an adaptations of Coopersmith's (1967) Self Esteem Inventory (SEI) and the Children's Locus of Control Scale developed by Nowicki and Strickland (1973).

Self-esteem was measured with twelve of Coopersmith's original 58 items which seemed most appropriate for this age group and which were balanced for positive and negative direction. Three additional items were added as suggested by Coopersmith, to provide an index of a socially-desirable-behavior response set. (eg., "My parents never get angry at me."). The reasons that two of these original measures were shortened were to reduce response time and to maximize attention to all items. Thus the twelve self-esteem items were interspersed with three SD-index items and ten locus of control items on the first of two pages.

The children's measure of locus of control (Nowicki and Strickland, 1973) like the well-used adult version (Rotter, 1966), measures the extent to which individuals have a generalized belief about their abilities to affect their own fate. The ten adapted items (those with the highest reliabilities) could be endorsed in either the internal or external direction. An example item is "Do you believe that when bad things are going to happen they just happen, no matter what you try to do?" Thus, the measurement of locus of control (LOC) was also done on the first page. Another reason for changing the original was to use a yes-no format rather than a likert scale to accommodate the youngest of the sample and the format of the SEI as well.

On page two and three of the SEMILOC is a combination of the Kiddie Mach and the Intolerance for Ambiguity Scale. Among the twenty items of the Kiddie Mach is one which reads, "The best way to get along with people is tell them things that make them happy." Marking "agree" in response was scored as an indication of a machiavellianism orientation, the tendency to believe that the ends justify the means (Christie and Geiss, 1971). Intolerance for ambiguity was determined using the content and format of the original scale (Moos, 1959) and interspersing the twelve items in with the Kiddie Mach items on pages two and three. A sample item for this scale was "People who seem unsure about things make me uncomfortable."

The SEMILOC was given with the two parts reversed in half the instances so as to minimize any order effect. The four scales have been used before and their reliabilities are established within acceptable limits (See Table Two), but since this was a composite, it was more important to establish the reliability on the new instrument. A test-retest procedure with four weeks in between tests, revealed a average correlation for the four instruments of .52. The correlation for each adapted instrument is also reported in Table Two.

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Insert Table 2 about here

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Game and sport patterns were obtained by questionnaires given to the child and to his or her parents (Appendices D and E). Whenever parents returned the questionnaires, (in about 65% of the cases), their responses

about sport participation were used; otherwise the child's self report in class was relied upon. These questionnaires provided information about which sports and games the child participated in, whether or not on an organized team and for how many years (sports) and for how many hours during the last week (games). Room was left on the game form to include games not listed. The questionnaire that the children completed also provided information about parent occupations used to provide an index of socioeconomic status.

Another procedure to be used was a measure of cooperation-competition devised as an adaptation of a procedure developed by Madsen and Kagan (1971). It is illustrated in Figure 1 and described in Appendix F and was given (in pairs) to only part of the sample. At the same time that that technique

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Insert Figure 1 about here

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was employed, a creativity test, the Uses Test designed by Torrence (1966) was also given. Each child was asked to mention in five minutes all the things they could think of for which to use a paper clip. Responses were scored on fluency, flexibility and originality (See Appendix G).

## Administration

After pilot testing of the instruments on the Jefferson sample (the basis also of the reliability comparison), the SEMILOC was administered verbally to each of the units in grades three through six of Jefferson and Units II and III of the Campus Laboratory School. Ample opportunity was allowed for questions of clarification. While measuring every attempt was made to avoid influencing the response. In the case of one of the schools, a small number of deaf children were given the test privately by specially trained teacher aides. During the same administration, children were asked to complete a short questionnaire regarding sport and game experience (Appendix D) which was attached to the SEMILOC instrument. On a number of occasions the younger children required and were given special help in interpreting the questions.

Administration for all classes took one hour per class and altogether about one week. During this time questionnaires were sent home to parents and the teachers were completing the Behavioral Rating Scale.

The sociometric instrument was administered to all classes (one-half hour per class) during the following week, and the tests of cooperativeness and creativity were done in pairs over the course of the following month. Five paid assistants[11] helped in the collection of these data with every effort being made (e.g., through counter balancing) to avoid order and experimenter effects.

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[11] Listed in the acknowledgements

Procedures for Data Analysis

After frequencies and distribution characteristics of the data were computed, the data were reduced to scale scores where appropriate (i.e., the SEMILOC) and were analyzed by analysis of variance, correlation, and regression techniques, as detailed in the Statistical Package for the Social Sciences, (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975)

## RESULTS

### Age and Sex Comparisons of Game and Sport Participation

The differences between girls and boys of different ages in terms of participation in sports and games is indicated in Table 3. As can be seen

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Insert Table 3 about here

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from the table, the older children were involved significantly more often in sports than younger children and boys more than girls. Participation in games of their own design was roughly comparable across age and sex. At a glance, the number of hours in game play (roughly fifteen on the average) belies the impoverishment argument put forth by Devereux (1976); but the very small number of older boys who were not involved in sports supports the contention of the expansion of organized sports.[12]

### Relationship of Participation Variables

For the purpose of testing Hypothesis 1 (that sport participation would be negatively related to game participation), the participation variables were intercorrelated.

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Insert Table 4 about here

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One of the relationships of most interest is that between "number of years" (of sport participation) and hours in game play during the last week. The fact that there was no significant correlation, either positive of negative between sport participation and game participation indicates that Hypothesis 1 should be rejected. There is no clear evidence here that participants in games of their own design are nay more or less likely to engage in sports than are non-participants. The higher-than-average correlation of the variables with "level" (self-reported level of performance relative to teammates) may be a function of a smaller data set (there was some loss of data), but if not, these results suggest that the more competent among the older boys are also the most likely to be playing games.

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[12] Of course, the possibility of distortion in reporting should also be considered here.

Comparison between Participants and Non-Participant in personality and Social Adjustment

Three separate analyses (correlations, analysis of variance and regression analysis) were used to test the hypotheses dealing with game and sport participation and personal-social adjustment. Also with some exceptions, the analysis are each broken down into four subgroups, grades three and four (Unit II) males, grades three and four (Unit II) females, grades five and six (Unit III) males, grades five and six (Unit III) females. Table 5 shows the correlation of the activity variables with the personality and social adjustment variables for each group.

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Insert Table 5 about here

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The significant findings indicate that for the younger group of males, years in sport was negatively correlated with 'breaks rules' and 'requires supervision', and positively correlated with 'follows rules'. It was negatively correlated with being considered a sissy by peers but was also negatively related to 'defends others' and 'works for the good of the group'. It was also negatively related to cooperative responses in the game situation and to flexibility and 'has ideas for things to do' (as judged by peers).

Of the games measures analyzed, the number of games participated in during the last week and hours playing games in the last week appeared to be most meaningful by their relationship to relevant variables and lack of relationship with irrelevant ones. "Games in the last three days" was derived by children in a testing context where they were given only a short time to respond. Its high correlation with fluency in the creativity measures suggest that it was tapping verbal abilities more than game experiences, and thus its correlates are not reported in Table 5.

Parents estimates of number of games participated in during the previous week was significantly correlated only with 'has many friends' and with the measure of originality. Estimates of total hours in game play for this group was also correlated with 'has many friends' but was also related to 'defends others', 'makes fun of others' and 'gets other children to do things'. It was also significantly related to the three measures of creativity.

In the third and fourth grade (Unit II) female group, years in sport was positively related to 'cooperates with you', 'cooperates with children'. 'is persistent individually and in groups' and negatively related to 'requires supervision'. It was positively related, ironically, to both 'insists on fair play' and 'ignores injustice' and negatively related to 'gets children to do things'. It should be pointed out that the small number of girls in this age group who actually played in organized sports makes the reliability of the findings somewhat dubious. With respect to game play, 'cooperates with you', 'is persistent individually and in groups' 'insists on fun play', 'has many friends', and 'ignores injustice' were

all positively related to number of games engaged in the last week while 'goes along with others' was negatively related. Hours in game play in the last week was negatively related to machiavellianism and was positively related to tolerance for ambiguity', 'cooperates with you', 'is persistent individually', 'is persistent in groups', 'is helpful to others', 'will help others' (peer rating), 'insists on fair play', and 'has creative ideas'.

Table 5 indicates that for fifth and sixth grade and Unit III males number of years participating in organized sports was positively related to self-esteem, tolerance for ambiguity, 'has many friends', and 'gets others to do things' as well as to both the percent of competition and cooperative responses in the Madsen board game. It was negatively related to 'cooperates with you' and 'is tolerant of others'. With respect to game play, 'has creative ideas' and cognitive flexibility (Uses Test) were positively related to number of games participated in during the last week but 'breaks rules' was also related. Hours in game play was also related to 'has ideas for others' and 'gets others to do things' but was also related to 'makes fun of others'.

In the fifth and sixth grade, Unit III female sample, number of years in sports was related to 'individually persistant', 'has many friends', 'has creative ideas', and 'makes good plans' but was also related to 'gets angry when doesn't get way' and to 'makes fun of others'. With respect to game participation, number of games participated in during the last week was positively related to 'gets others to do things' and originality but was also related to 'ignores injustice', 'breaks rules', and 'gets angry when doesn't get way' and was negatively related to 'individually persistent', 'insists on fair play', 'has creative ideas', and 'has ideas for things to do'. Total hours in game play was also negatively related to this group to 'has ideas for things to do' but positively related to originality. It was also related to 'wants help a lot', gets others to do things' and 'is a tomboy'.

Taken all together the magnitude of these relationships is generally quite low, accounting for a very small percentage of the variance explainable. This and the fact that some of the existing relationship were contradictory argued for further analysis. Thus, in the second analysis to deal with the question, subjects were grouped into four groups using median splits on the participation variables: 1) High game/high sport if they had participated for more than one year in sports and for more than 11 hours in games during the previous week; 2) 'High game/Low sport': one or no years in sport, 11 plus hours in games; 3) 'Low game/High sport': less than 11 hours in game play, and 2 or more years in sport; and 4) 'Low Game/Low sport' less than 11 hours in game play, one year or less in sports. These four groups (Grades 5, 6, and Unit III males only) were then compared with an analysis of variance, the results of which are displayed in Table 6.

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Insert Table 6 about here

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Each member in the group columns represents a deviation from the grand mean at the left. There are again only a few significant effects. Self esteem is considerably higher in the High sport/High game group and tolerance for ambiguity is greater in the two groups with sport experience regardless

of game experience. Teacher ratings were not different as a function of this grouping but several of the peer ratings indicated a significant difference. The high sport groups were significantly less likely to be seen as 'defending others' than those with less sport experience; the high sport/high game group were the most likely to be seen as following the rules in the teacher's absence; and the high game children, regardless of sport experience, were seen as having more friends; and the high game/low sport group was higher than the others on flexibility.

One other relationship showing a trend toward significance ($p < .11$) was peers' indication of who 'doesn't play games with others'. Interestingly the high sport groups were higher than the low sport groups in this regard, with the high sport/low game individuals being so identified most often.

The number of significant relationships that have been presented so far, exceed the number that would have come about by chance alone - but not by much. Also, the significant correlations reported earlier may have been due to the influence of other factors, such as socioeconomic status, on each of the variables in the relationship. Thus, a third, more rigorous approach was used. A regression analysis enables one to control for such effects and more accurately determine the variance in a criterion variable that is directly related to variation in a predictor variable. Thus, a regression analysis was done with the two male groups and the older female groups using the personality and social-adjustment variables as criterion variables and age, father's occupation status, number of years in sports and number of hours in games during the last week as predictors. The other advantage of this technique is that the influence of game playing on the relationship of sport to the others and vice versa can be similarly controlled. Thus, the results of the regression analysis are indicated in Table 7.

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Insert Table 7 about here

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For the younger male groups the analyses indicated that with the effects of age, socioeconomic status, and game participation controlled, years in sport is negatively related to teacher's ratings of 'breaks rules' and 'requires supervision', positively related to peer ratings of 'follows rules when the teacher is gone', and negatively related to peer ratings of 'defends others', 'has ideas for things to do' and 'is a sissy'. There is also a trend toward significance in the relationship of sport participation to external control. Young children involved in sport tend to see control as being more external to them. With age, SES and years in sport controlled, a positive relationship is indicated between hours in game play and nominations by peers as the one 'most likely to defend others' and as one 'who has many friends'. Trends toward significance are also indicated in relationship to 'makes fun of others' and 'gets other children to do things'.

Controlling for age, SES and game participation in the older male group, years in sport was positively related to self-esteem and to tolerance for

ambiguity and to the peer rating of 'gets others to do things'. It was negatively related to the teachers rating of tolerance for others. There is also a trend toward significance in the relationship of sport participation and peer judged popularity ('has many friends'). Hours in game play was significantly related to 'gets other children to do things' (peer rating) and, negatively related to individual persistence (teacher rating).

For the older female sample, with other variables controlled, sport participation was positively related to teacher ratings of persistence and creativity, while peer ratings indicated negative relationships 'does what grownups think is right', and 'follows rules when the teacher is gone' and a positive relationship to 'gets angry when doesn't get way'. Game participation was positively related to 'gets other children to do things' and to 'is a tomboy' ($p < .06$).

Further Analysis of Sport Participation

It seems reasonable to expect that whatever effects exist may be also determined by the type of involvement. Does the experience of a superior performer have a different effect than that of a benchwarmer? Is four years of participation different in effect from one year of participation in four different sports? The result of an analysis of variance in personality and social adjustment as related to level of participation is shown in Table 8. Group assignment in terms of level of participation was

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Insert Table 8 about here

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determined by the response to the question of "how do you compare with your teammates." Only the first-listed sport was used and Level 1 (Group 1) was the lowest two categories, Level 2, the middle, and Level 3, the highest two. And only the results from the older male group were analyzed in this manner.

As can be seen from Table 8, members of the "average" group were rated as more individually persistent than the lower level who were seen as more persistent than the highest level. The highest level performers were less likely than the other two groups to be perceived as insisting on fair play. Average players were rated by peers as the least likely to follow rules in the teachers absence while poorer players were rated as most likely to do so. The superior players were also rated as having "many friends" more often than the average players who were seen to have more than the below-average players. The average players were most often seen as getting other children to do things, with superior players and the inferior players following in order. The average players were seen as 'doing what adults think is right" by peers less than either of the other two groups.

On the question of multiple versus single sport participation, t tests were done between the two groups on the personality and social adjustment variables. The results, shown in Table 9, indicate that multiple sport

participants have a higher self-esteem and were also rated higher in

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Insert Table 9 about here

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creativity by their teachers. Peer nominations indicated a greater tendency for multiple sport participants to be regarded as good planners and good leaders.

## DISCUSSION

### Tests of the Hypotheses

To determine the significance of the results just reported it is necessary to return to the hypotheses. Hypothesis 1 predicted that sport participation would be negatively related to participation in child-directed games. As was reported and shown in Table 4, there was no strong evidence for such a relationship, but nor was there a positive relationship between the two. Level of sport participation was slightly related in a positive direction to some of the games participation variables. This suggests that for those individuals who are involved in sports, the ones who see themselves as more competent than teammates are somewhat more likely to be playing more games and for more hours per week. The suggestion is that these individual children may be the most creative and athletic of the group, but in any case, the general hypothesis was not supported.

Since the great proportion of the older male samples are involved in organized sport, the nonparticipation sample may be different in other ways. It is possible, for example, that sports participants may, in fact, be playing fewer games than they would be if not involved in sports, but nonparticipants may also be playing fewer games, especially those which are sport-related (e.g., baseball and football) by virtue of the fact that they are identified as "sports."

To better test this hypothesis, then, it may be necessary to compare children from separate communities - one with organized sport available and one where there are no sports programs (if such could ever be found). This would allow for more comparability of the sport-playing and non-sport-playing groups in terms of such things as activity level, playfulness and physical, athletic ability.

Hypothesis 2: Involvement in child-directed games will be more highly related to prosocial behavior than will sport participation. While there are many relationships to be considered here the results indicate only moderate support for the hypothesis. Examining the relationships from the correlation table (Table 5) which still remained when controls were employed in a regression analysis (Table 7), there is some evidence that among the younger males the game players are popular and effective with peers and are seen by peers as likely to come to their defense. By contrast, those who participate in sport, while being seen as generally cooperative and obedient both by and in relation to the teacher, are seen by peers as having fewer ideas than other children and as being less likely to defend someone in need of help. There was also a relationship between game participation and making fun of others. While this runs counter to the hypothesis, it does suggest greater involvement in social relationships (e.g., teasing) with other children.

While one must exercise some caution in interpreting peer ratings and despite the fact that the relationships are neither large nor consistent, there is at least some suggestion that with this younger male sample, high game participation is associated with more of a peer orientation, while high sport participation is associated wtih more of an adult orientation. (This point will be returned to shortly.)

With the older males, the characteristic of relationships changes somewhat and no such generalization is possible. There is some indication of increased popularity of children engaged in organized sports and a greater likelihood that they are instrumental in getting other children to do things - an indication of leadership perhaps - but there is no greater likelihood that they are supportive or helpful towards peers or cooperative with the teacher. And there is, in fact, a strong relationship between years of sport participation and intolerance of others (as judged by the teacher). With this comes a reconsideration of the work on competition (Bryan, 1977; Barnett and Bryan, 1974) and on structure (Huston-Stein, et al, 1977; Roe, 1977) showing an inverse relationship of those variables to empathy and giving. It should be also noted (from Table 8) that the superior players were the least likely to insist on fairness of play.

But in comparison, game playing activity is apparently no more supportive of positive social relations. There is again evidence of effectiveness in directing the activities of others but little else. There is some hint (despite missing data on the question) for teachers to regard the high game players as being uncooperative and lacking persistence. The incompatibility of a playful orientation to games and the demands for "good behavior" in school may be responsible. (See Lieberman (1977) for further discussion of this relationship.)

Although the analysis of this hypothesis in the female sample was limited by the fact that sport participation was much less frequent than with boys, there are findings of interest. With the younger female sample, both game and sport participation is related to teacher judgement of cooperativeness, and fairness, but to little else. In the older sample of girls, sport involvement is positively related to teacher judgement of cooperativeness and creativity, but negatively related to peer judgements of obedience. And the fact that peers identify these children as the ones most likely to get angry when they don't get their way, suggest a certain rebelliousness that may be apparent to peers if not to teachers. Game participation with this group is associated with leading others and with being a tomboy. Interestingly, sport participation was unrelated to recognition as a "tomboy". Perhaps this reflects a change in attitude regarding women participating in sport which does not apply to participation in certain physical games. According to Rosenberg and Sutton-Smith (1961) such games as football, baseball, etc. have become increasingly "masculine" by virtue of a decline in "girls" games and a diffusion of sex-differentiation in other game categories.

Hypothesis 3: Participation in organized sport will be more highly related to self-esteem than will game participation. This hypothesis can be considered confirmed for the older male sample while rejected for the younger male and older female sample (no test was made with the younger female sample). Because there is also evidence of greater popularity among older male children with involvement in organized sport, it may be that the longer a male child is involved in sports the higher is his self-esteem as a consequence. But with such correlational evidence one must also consider the possibility that both popularity and self-esteem provide a child with the confidence to approach the sport situation - a situation which may at times be stressful. Longitudinal study looking at changes over time with and without sport experience may be necessary to determine the direction of causality.

Hypothesis 4: Children involved in organized sport will reflect higher

levels of persistence. This hypothesis was not supported in the two male samples, but the girls who were involved in sports were regarded as by teachers as being more persistent than others both individually and in groups. One can only speculate about these sex-differences, but it may be that more persistence is required by girls to overcome cultural, sex-role prescriptions which oppose participation in sport.[12]

Hypothesis 5: Participation in organized sport will be negatively related to tolerance for ambiguity while participation in child-directed games will be positively related. In none of the groups was this hypothesis confirmed. Indeed, in the older male sample the opposite was found; more participation in sport was strongly associated with high tolerance for ambiguity. This relationship was surprising enough to cause the investigator to recheck the direction of the scales and the relationship several times. As a post hoc explanation (and in the absence of better alternatives), it might be that more involvement with adults in decision-making roles teach greater tolerance for confusion and delay in decision making and problem resolution. Disagreeing with items such as "people who seem unsure of things make me uncomfortable" may indicate more experience coping with adult-controlled activities. One can see a certain amount of resignation in children in a sport where adults negotiate the procedures and settle the conflicts.

Hypothesis 6: Children in child-directed games will show evidence of an internal locus of control which children in organized sports will not. This hypothesis must be rejected for each of the samples. There is, however, some evidence of a more external locus of control in the younger third and fourth grade male children who participate in sports. At the risk of overstating this, it is somewhat consistent with the other findings indicating a more positive demeanor in this group toward the adult world. It may be that in contrast to the older boys who are competing out of a sense of achievement potential, these younger boys may in some cases responding to the "press" of social approval associated with participation. In other words, they may be more other-directed than inner-directed.

Hypothesis 7: Participation in organized sport will be related to machiavellianism. No support was found in any of the groups for this prediction. Whether sport has no effect on the belief that the ends justifies the means or whether the Kiddie Mach Scale just doesn't measure it, is open to conjecture. (The low reliability established with this measure suggests the latter.) In the younger female sample it was negatively related to hours in game participation suggesting that girls who play games a lot are less likely to "win at all costs" but since the measure was unrelated to just about every other variable, the validity of this lone relationship is questionable at best. The effects of the emphasis on winning on manipulatory and expedient behavior should continue to be investigated.

Hypothesis 8: Game participation will be associated with higher creativity scores. This hypothesis is at least partially confirmed for the younger male and the older female samples. (No creativity measures were taken with the

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[12] This argument has been made elsewhere by the author (Kleiber, 1972, 1978) in explanation of sex differences (favoring women) in the effects of sport participation on young adults.

younger female sample.) Hours in game play was associated with all 3 creativity measures for third and fourth grade boys and with the originality score of the group of older girls. Teacher ratings of creativity present a somewhat contradictory picture. This rating was positively related to sport participation but negatively related to 'number of games in the last week' for the older girls.

In the case of the younger girls and the older boys, teacher ratings on creativity were also associated with measures of game play. Further, with the older boys, the high game/low sport group scored significantly higher on flexibility than the other three groups (Table 6). Thus, while the findings are somewhat inconsistent, there is evidence of some relationship between creativity and game play. Measurement of both the type of game and the degree of involvement might have yielded even higher relationships. Making up a game is essentially a creative act.

In general, the effects are not very conclusive about the effects of either game or sport experience on personality development and social adjustment. Some of the findings are suggestive of the possibility that sport participation leads to a more adult, conformist orientation while game participation leads more directly to a peer, expressive orientation but the evidence is rather sparse.

Part of the problem may lie in the measurement of the variables. Two of the personality measures as well as the teacher behavior rating scale and the sociometric technique were adaptations and thus previously untested. The questionnaire relied on parents who may either have not known of the children's game activities or may have distorted the amounts in a socially desirable direction. The same was possible in the child, self-report items dealing with sport participation.

But the lack of relationship may also have been accurate, indicating that these experiences have little effect, or that other factors internal to each (e.g., intensity of involvement, interactive roles, etc.) may have had more of an effect. Or perhaps the effects of the experience are delayed by some amount of time, e.g., not showing up until adolescence.

Where there were relationships, another consideration is the possibility that participation is a consequence rather than a cause, that children who are secure or socially well adjusted are able to survive the sport "selection" process that Ogilivie and Tutko (1972) describe. For this reason a follow-up study was designed to determine whether changes in personality could be related to intervening experience in sport. It is described in the next section.

## FOLLOW UP STUDY

### Procedure

An attempt to identify causal direction in relationships between sport participation and personality was undertaken in the winter of 1977-78. The SEMILOC instrument was readministered to the fifth and sixth grade students in Jefferson elementary school and Unit II students in the Campus Laboratory school in St. Cloud Minnesota. Sport participation including self-perceived

level of performance in the months between tests was also obtained.

Personality variables scores were then subjected to an analysis of variance with sport participation as the independent variable. Post test personality scores as the dependent variables and pretest personality scores as the covariate. This effected a comparison between sport and non-sport participants with previous experience being controlled and the change in personality being potentially attributable to intervening experience.

Results and Discussion

The numbers of students from whom data were gathered and the actual activities engaged in are presented in Table 10. One interesting thing to be immediately gleaned from these results in the narrow range of the

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Insert Table 10 about here

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girls self-perceived levels of performance compared to that of the boys; 74% of the girls described themselves as "average" compared to only 32% of the boys. Since the comparison was to teammates there was no reason to expect such differences. Two alternative explanations come to mind: 1) the experience of girls in sport is comparatively limited thus restricting their information for comparative judgements; 2) the fear of success syndrome originally presented by Horner (1972) would predict that, especially in the traditionally masculine area of sport, girls would minimize their relative excellence.

Another perspective is that the distribution of the male sample was negatively skewed to the point that 32% described themselves as "in the best 10%" while only 8% described themselves as below average. This may reflect the importance that relative performance in sports has for young boys. The study of self-perceived ability, and especially in relationship to sex differences may be an important research direction.

A look at the question of primary interest, the effect of sport experience on personality change, is provided in Table 11. The only re-

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Insert Table 11 about here

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lationship approaching significance was a tendency for nonparticipating females to show a greater reduction in machiavellianism orientation over a years time than participating girls. This is consistent with the original hypothesis that participation in sports supports an "end justifies the mean" (win at all costs) orientation; but the fact that the actual differences were small, the instrument reliability was not high and none of the other variable changes was significant makes this effect questionable.

Looking exclusively at the participants (Table 12) the level of parti-

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Insert Table 12 about here

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cipation was related to only one change. High level female performers (a small group, you will recall) showed a tendency to reduce their tolerance for ambiguity while low level performers increased theirs. If level of performance is any reflection of psychological investment, this relationship is consistent with the original hypothesis that participation in sports will be negatively related to tolerance for ambiguity. But here again, the effect is of marginal significance and is inconsistent with other results.

Looking at self-esteem for males, Tables 10 and 11 indicate a greater average increase for participants than nonparticipants and for high level performers then low level performers, and while these changes are statistically nonsignificant, they do suggest that in some cases the sport experience may have made a difference. It is also important to note, however, that with this quasi-experimental design we are only approaching the answer to the causality question be approximation. Although there is a comparison group of nonparticipants other factors may have influenced the changes associated with participation. For example, if participation on a team results in more association with peers it may be that, rather than the sport, that is responsible for any change.

## CONCLUSIONS

If this were a standard research report it would be necessary to conclude with care only that which the data warranted. But that would be an inadequate and in this case dishonest way of defining what the literature of social psychology and my own personal experience suggest.

1. Organized sport can be valuable for children.

In ending the previous section the reader might have been left with the uncomfortable feeling that I would generalize from that experience in college football to that which children have in organized sports. Well, I will, to some extent anyway.

It seems to me that association and the related consequences of cooperation, interdependence and cohesion make sports and games valuable socializing experiences. The maintenance of a team of individuals over a season is an interpersonal challenge to the players as well as to coaches and parents. In one way this is an advantage of organized sports over child-directed games where kids re-form the teams every time. (A compromise comes of course when one neighborhood team journeys to an adjoining neighborhood for a game.) Children thus build up some allegiance to a unit greater than themselves, and while the evidence is lacking, this probably serves as a type of responsibility training.

The experience of cooperating with others has been shown to have some effects on reducing hostility and prejudice (Aronson, 1976), improving relations in general (Johnson and Johnson, 1976), and even improving performance (Johnson and Johnson, 1976) and it is likely that at least some of that results from sport settings where team relationships are maintained by coaches.

With respect to personality development, the status and prestige associated with participation seems to have a payoff in popularity and may have some effect on feelings of self-worth as the results of the study suggest. More research is needed, however, to determine the stability of sport-related, self-concept and its dependence on performance and adult approval.

Persistence is another quality which may be affected by experience in sport as the teacher ratings reported suggest. Perhaps the orientation to "practice" in preparation for games has some transfer value for effort and delay of gratification in the classroom.

Another area that has not been explored is the effect of sport participation on learning. It may be inappropriate for a conclusion section, but speculating, when a child is required to learn what to do on 300 different offensive football plays or where to throw the ball in any number of situations involving runners on the basepaths, it is likely that he or she is exercising some important cognitive abilities. Given the potential for sport to reach children that school does not, this would seem to be a potentially fruitful area for research.

2. There are clear limitations in the value of organized sports for personality development and social adjustment in childhood.

Some of the limitations result from common practices in organized sport, e.g., the influence of coaches and parents. Others are more inherent to the structure of the situation itself.

1. The amount of control is excessive. Coaches control the children and the action of the game of organized sports beyond that which is beneficial to the children. In the study reported, children involved in sports were rated by teachers and peers as basically "well-behaved", but it is entirely possible that what supports obedient, conforming "good" behavior also inhibits spontaneity, creativity and responsiveness to others. Where adults maintain control of the action and the consequences children naturally learn to attend to them for direction, and the importance that the situation holds for the adults, especially the coaches, suggests that this attention will be continually reinforced.

It is not suggested that coaches have in general any need to dominate children nor is there any evidence to support the popular belief that they are vicariously living out their own fantasies through the players (though this maybe a hypothesis worth testing). What is apparent, however, is that coaches are not behaving simply altruistically in the best interest of the children. In fact, they are the ones who are playing -- by virtue of the fact that they are the ones who make the changes and modifications in the play environment.[14] They manipulate the structure when they make line ups, employ strategies and attempt to resolve conflicts; and it is entirely possible that they do all of this with little doubt that they are acting in the interests of the children. The "coach" is a role and whatever behaviors one assumes to be appropriate are "played out" by the adult who takes that role.

The coach can play a very significant role in the life of a child. Porter (1967) has argued in a study of sport in adolescence that because a child cannot choose a parent, or for that matter, a teacher, a coach may have special significance as an "adopted" parent figure. But the choice is limited of course when the organization assigns a child to a team and freedom is further restricted by the stigma attached to quitting if the relationship disintegrates. As will be discussed further in the next section, children have far less ability to control events than do adolescents and to make choices for intrinsic reasons when there are so many extrinsic consequences.

The effects of "cooperation" are also affected by the structure of sport. The freedom to establish bonds with others may be a critical factor in the ultimate value of a particular social structure. A unit that no longer reflects the personal investment and committment by its individuals but is rather a structure held together by rules, regulations, sanctions and rewards of adult society will inevitably lose some of its socializing value. Empathic response requires that individuals think about the experience of the other (Smither, 1977), and if cooperation (i.e., teamwork) is demanded by the coach, the awareness of anothers experience is not as important as it would be if the individuals involved were confronted with some shared problems and challenges.

Excessive control probably has, at least in some cases, an affect on

14 See M. Ellis, Why People Play (1973) for related definitions of play.

personality as well. In the present study there was some evidence of the younger children involved in sports having a more external locus of control which is, in effect, a feeling of helplessness relative to adults. This may also be reflected in a higher tolerance for ambiguity found in participants. And the peer ratings of "gets others to do things" may be less related to leadership than to a pattern of dependence since "wants help a lot" was also related in some cases.

These considerations are not based on the few findings of the current study. Observations of children's little league games in recent weeks have lent support to the belief that children exercise virtually no control over the initiation, action and maintenance of the game. On one occasion, a third base coach physically restrained a runner who had rounded third and was heading for home. He was embarrassed and relieved that the umpire didn't call the runner out (this violation of the rules brought a protest from the opposing coach). But the significance of the event is in the evidence it provides for the intensity of the coach's involvement in the situation.

It is possible, of course, for coaches to be less directive, but where there are umpires to make decisions about rule enforcement and violation, the child has no need to deal with questions of justice and fairness. This is a structural limitation of organized sports that severely limits its potential to contribute to moral development. As Kohlberg would see it, where there is no conflict there is no growth. When the coaches debate the "legality" of a given situation they are the only ones who are benefitting.

2. The consequences of performance are excessive. There are a number of indications of too much emphasis on winning and avoiding losing. Being "number one" and winning games and championships are much more important than experiencing a "well played" game.

One of the effects of this is to establish the "overjustification" effect which is, simply speaking, the process by which play is turned into work. Although children enjoy the action, "successful" performance and victory are the conditions that make the experience pleasurable. This is not unreasonable if the purpose of the experience is to "prepare children for the"real (i.e., the "work") world" but if it is important to encourage further participation, care must be exercised to avoid "buying" the investment of kids with awards, adult approval and social status, all of course, dependent upon the outcome of performance.

Does the emphasis on winning lead to too much pressure on the children? This is a question asked repeatedly. There is some evidence that other performance oriented activities such as band lead to an equal amount of pressure (Simon, 1978), but whatever the context, the consequences and pressure must be considered excessive where there is frequent and repeated emotional breakdown. Tears are, of course, common in childhood but when they are a result of public exposure of failure to perform successfully in a game, little redeeming value can be found for them. The regularity of misattribution of the causes of their successes and failures (Roberts, 1978;

Iso-Ahola 1977) whether it be in a failure to recognize their own inabilities or some other factor, may also reflect a focus on the product of the game rather than the process.

Contrary to the suggestion of Levy and Bishop (1972) and others, this emphasis on performance probably reduces the extent of healthy risk taking. While children in sand-lot baseball readily throw themselves into a "hot-box," thi situation would only result from a runner's mistake in little league baseball. In other words, play is much more conservative in the latter context. Where older children and professional athletes will gamble for advantage, children in organized sports will usually play it safe.

The emphasis on winning may also be responsible for the intolerance of others that teachers noted more in the male children in the present study who participated in sports. As the stakes are higher, there is less concern about costs to get there. As the studies on prosocial behavior (e.g., Bryan, 1977) and professionalization (Webb, 1969) show us, when competition and achievement increase in importance the values of mutual support and fairness are sacrificed.

3. The effects of sport on personality development and social adjustment vary with age.

The argument here is for a discontinuity in the value of sports for development and adjustment. The context of sport may be ideal for the transitions of adolescence and young adulthood. At this age, people exercise a good deal more autonomy and the issues of identity vs. role diffusion or intimacy as isolation (Erickson, 1963) find sport a fitting context for the expression of individuality and the establishment of interpersonal relations and group committment. Prior to puberty, however, individuals are markedly different in their abilities to understand and cope with such problems. These are formative years, cognitively, emotionally, and socially, and care must be taken to avoid irreparable damage. One waters a three year old tree in different ways than a seedling.

Unlike the last section, this argument is not inherently a criticism of organized sports for children; it is instead an argument with global generalizations, statements about the value of sports. Perhaps to establish a frame of reference we should consider sports for the elderly at the same time.

4. Sports provide socialization for maintenance while games provide socialization for change.

Whether it be learning to cope with stress, learning to compete, learning to "fit in" and be a part of a group or learning to relate to others, a substantial rationale for organized sports adopted by policy makers and strongly felt by parents and coaches is that they prepare children for the real world. But it is the position here, based upon the literature examined as well as convergent evidence from the present study, that while the conformity and obedience insisted on in organized sports will indeed enable children to fit in well, it will do little to provide them with the abilities to modify and improve society. This is due both to the lack of questionning of the values of various aspects of the situation and to the lack of decision making allowed children in the process of

game initiation and maintenance.

The child-directed games, by contrast, give children more control of their play. Children are, in effect, involved in social model building in games, and it is likely that the skills they develop in the process will have some transfer value. The evidence from the present study indicated that while game playing was not related substantially to social adjustment and personality measures, it was related in some cases to creativity.

Brian Sutton-Smith has revised his original view of games, held with John Roberts (1961) as being models of the adult culture useful in anticipatory socialization. While that is still an important part of game experience he now emphasizes their creative, transformational aspects (Sutton-Smith, 1976). Game playing as variation on cultural patterns is further supported in recent research by Townshend (1978). Taking issue with the original hypothesis of Roberts and Sutton-Smith (1961), he provides evidence to show that in many African cultures, the games are not reflections of adult society but are rather novel structures of the children's own design.

Returning to organized sports, it may be important to note that since they have evolved from adult sports and not from children's games, they are more a reflection of conventional adult societal values. Thus, the roots of the two game contexts are quite different.

It may also be worth questionning the assumption of sports as preparation for the competitive world of adulthood. As will be discussed further in the next section cooperative structures are the basis of all societies, primitive and civilized.

5. There is a need to reconsider the concepts of cooperation, competition and achievement behavior in childhood.

A defense of sports for children often becomes a defense of competition. To some extent the competition for victories, championships and public recognition can be compared to the competition for contracts, salaries and public visability. But the comparison of organized sports to business and industry should be extended to recognize the importance of intragroup cooperation (teamwork) and intergroup association (see Leuschen, 1970, for further discussion). Success and effectiveness as well as personal and social satisfaction probably depend in all cases more on a desire for mastery in conjunction with intragroup cooperation than on the characteristics of the other two relationship patterns. Competitiveness, as Helmreich and Spence (1978) have shown, becomes important to achievement only when the other things are missing.

Returning to games, we have in the ideal the best synthesis of competition and cooperation, whether in adulthood or childhood. The "fun" in a game, the challenge of a game, the potential for the game to contribute to mastery and personal transcendence all depend on association and cooperation over principles of fairness, mutuality and equivalence. Growth, both personal and social, is a direct function of the ability to enact the "well-played game" in a play community (DeKoven, 1978).

## IMPLICATIONS FOR RESEARCH AND PRACTICE

### Research Directions

More work is needed on the issues raised here. Better designs need to be utilized than that used in the present study to arrive at evidence of cause and effect. While there are obvious ethical considerations that restrict the use of children in experimental designs, quasi-experimental designs like that used in the follow-up study here are a step in the right direction. In this case, it is important that since children cannot be randomly assigned to conditions, attempts to make samples comparable be made in other areas as on the basis of activity patterns. Better measures of game participation can also be taken. A focus on the level of involvement in the process of game initiation and conflict resolution would seem important.

As to the specific content of research, anxiety, depression, achievement motivation, creativity, prosocial behavior and attitudes, aggressiveness, coping abilities and moral reasoning should be investigated further as potential consequences of participation in sports and games. Field research could begin to identify the structural conditions such as decision-making opportunities and the use rewards which make a difference in those variables.

### Practical Suggestions

#### Programming

There are several things that follow from this analysis which might be useful for those individuals who are responsible for recreational programming.

1. Meta-game training - This is a relatively new idea. Where kids are playing their own games and conflict results, adults are often moved to structure the conditions. While this is a reasonable response there are many reasons - discussed earlier - for holding back on immediate intervention. But adults can play the role of 'resource person' to children in conflict. They can assist children through value clarification procedures to help them recognize their shared values and shared committments so that they can proceed with the attempts to establish and enact the "well played game" (see DeKoven, 1978).

2. Maintenance responsibilities for children - When an organization does exist, everyone can benefit if children are given responsibility for its maintenance. There are a variety of possibilities, but the high cost of field and facilities maintenance makes this an ideal area for involvement. The value for the children is that they work together to maintain the operation in much the same way as they do in their own games; i.e., it requires an interdependence to have the game eventuate. Thus, if lawn mowing and field lining were left to members of opposing teams the week before the contest, the "superordinate goal" of playing the game should lead to better interpersonal relations than is the case where the only intergroup association is the obligatory hand-shake at the end of the game.

3. Opportunities should exist to balance teams after season is under way.

This is the question again of "winners" and "losers." Winners may be thrilled, if not challenged, but the losers - and they may include good players as well as inferior ones - may have a feeling of helplessness. It may mean sacrificing the notion of team standings and championships, but if there was the opportunity to realign - at midseason, for example, in the interest of establishing equality of teams and maximum uncertainty of outcome, there would be a greater sense of challenge for everyone.

4. More structural variation should be established in the types of league play.

It is possible, for example, to maintain a baseball league where children choose teams. The value of variety is to allow for individual difference. Having no pitcher (T-Ball) or an adult who pitches 'so that the batter can hit' are versions of little league baseball which provide for more opportunity for success and less pressure.

## Coaching

1. Allowing decision-making.

The inherent rewards for coaches associated with having your "own team" and playing with lineups, strategies, etc. has been discussed earlier. While coaches would have to relinquish some of the pleasure along with the control, the benefits for children would probably make the sacrifice worthwhile. Martens and Seefelt (1978) have gone so far as to include decision-making as a "right" of children in the Bill of Rights for Children's Sports. Children can also be effectively allowed to make decisions about practice routines as well, as Veen (1972) has shown. There is a lot of room for coaches to experiment with modifying the decision-making process. In addition to practice routines the team or a game-designated captain could determine lineups before the game and strategies during the game. This suggestion is also made for those who have little interest in furthering personality development and social adjustment but are interested simply in developing better ball players.

Rather than being at the expense of learning, it is likely that such experiences will increase flexibility and adaptability of response and strategic competence in general. A child's attention and enjoyment in the activity will be maximized when he/she has greater control of the action.

2. Implementing the 'resource person' role.

Once children take more responsibility for the process and thus have more control over events, they will realize the importance of the coach's abilities and wisdom. But rather than resuming control at this point, a coach can be effective in helping a player think through the answer to a question or solution to a problem.

Further a coach can make suggestions at times when the child is losing attention. The "flow" model (Csikszentmihalyi, 1975) implies that children

who are not fully involved will be either bored or anxious. Subtly increasing the challenge for those who are bored or improving the abilities (or attention) for those who are anxious can lead to very effective, but not overly controlling, intervention.

In general, it should be recognized that coaches can be most effective by keeping the sport a game for kids. There are certain structural limitations to organized sport but the potential for improvement in the interests of both the children and society in general is enormous.

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Figure 1

Circle Matrix Board

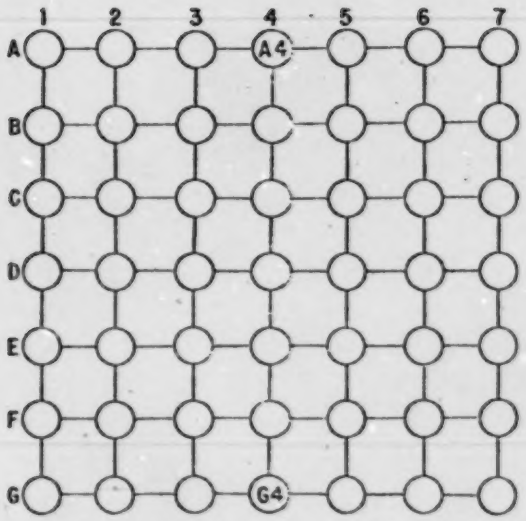

Table 1

Distribution of Subjects by
Sex, Grade and School

| School and Grade | Male | Female |
|---|---|---|
| Jefferson - 3rd | 27 | 16 |
| 4th | 19 | 25 |
| 5th | 20 | 23 |
| 6th | 15 | 28 |
| Campus Lab | | |
| Unit II | 41 | 31 |
| Unit III | 36 | 41 |
| Garfield - 4th | 12 | 10 |
| Total | 170 | 174 |

Table 2

Test-Retest Reliability Coefficients
for Instruments

| Instrument<br>Instrument | Test-Retest<br>Correlation |
|---|---|
| Self-Esteem Inventory (Coopersmith, 1967) | .88 |
| Locus of control Scale for children (Nowicki & Strickland, 1973) | .67 |
| Kiddie Mach (Christie & Geis, 1971) | — |
| Tolerance for Ambiguity (Muuss, 1959) | — |
| SEMILOC | |
| Self-Esteem | .67 |
| Locus of Control | .52 |
| Machiavellianism | .38 |
| Tolerance for Ambiguity | .53 |

Table 3

Participation in Sports and Games

| | Male | | Female | |
|---|---|---|---|---|
| | 3-4 | 5-6 | 3-4 | 5-6 |
| Sport Participation | | | | |
| Yes | 45 | 59 | 12 | 47 |
| No | 35 | 8 | 47 | 40 |
| Mean of Years Participation | 1.06 | 2.06 | .31 | .90 |
| Mean Games Played in last three (3) days (self-report) | 4.22 | 4.41 | 4.61 | 5.47 |
| Mean games played in last week (with parents) | 8.69 | 8.41 | 8.99 | 8.01 |
| Mean hours in game play in last week | 16.33 | 15.89 | 15.01 | 14.22 |

Table 4

Intercorrelations of Games and Sports Variables

| | Plays Sport (1 = yes, 2 = no) | | | Years in Participation | | | Level of Participation[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III[1] | I | II | III | I | II | III |
| "Engages in games" (teacher rating) | .09 | -.16 | -.37** | .01 | .24 | .21* | | -.30 | |
| "Likes to play games" (peer rating) | .19 | -.05 | -.07 | -.09 | .05 | .09 | | .29 | |
| "Doesn't play games" (peer rating) | -.17 | .11 | -.07 | .13 | .20 | -.16 | | -.17 | |
| Number of games in last three (3) days (self-report) | .32* | -.18 | .03 | -.15 | .07 | -.04 | | .33* | |
| Number of games in last week (parent questionnaire) | .21 | .16 | -.12 | -.15 | -.08 | .16 | | .20 | |
| Hours in game play in last week (parent questionnaire) | .13 | .16 | -.06 | -.14 | .06 | .13 | | .25 | |

[1] I = Grades 3 and 4 and Unit II Males
II = Grades 5 and 6 and Unit III Males
III = Grades 5 and 6 and Unit III Females

[2] Complete information available only on older male group

* $p < .05$ of this correlation by chance

** $p < .01$ of this correlation by chance

Table 5

Correlations of Game and Sport Data with Personality and Adjustment Variables

Group 1 = Third and Fourth Grade Boys
Group 2 = Third and Fourth Grade Girls
Group 3 = Fifth and Sixth Grade Boys
Group 4 = Fifth and Sixth Grade Girls

| | Number of years in sport | | | | Number of games in last week | | | | Hours in game play in last week | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Self Esteem | .07 | .04 | .25* | .00 | -.12 | .08 | .03 | .02 | -.11 | .20 | .02 | .01 |
| Locus of Control | .16 | -.12 | .09 | .02 | -.11 | .18 | -.12 | -.06 | -.02 | .23 | -.08 | -.06 |
| Machiavellianism | .09 | .10 | .04 | .11 | -.09 | .12 | .08 | .11 | -.15 | -.27* | .02 | .11 |
| Tolerance for Ambiguity | .18 | -.15 | .34* | .15 | -.16 | .18 | .02 | .05 | -.04 | .27* | .09 | .06 |
| Teacher Ratings | | | | | | | | | | | | |
| cooperates with you | .02 | .25* | -.23 | .03 | .05 | .28* | -.13 | -.17 | .04 | .24 | -.09 | .06 |
| cooperates with children | .14 | .29* | -.15 | .04 | .03 | .05 | -.09 | -.16 | .04 | .09 | -.03 | .01 |
| is persistent individually | .06 | .30* | .12 | .23* | .00 | .21* | -.28 | .10 | .02 | .30* | -.24 | .00 |
| is persistent in group | .14 | .25* | .11 | .12 | .17 | .27* | -.15 | -.22* | .13 | .35* | .08 | -.08 |
| is helpful to others | .13 | .00 | .01 | .00 | .09 | .07 | -.14 | -.16 | .12 | .29* | -.10 | .01 |
| breaks rules | -.31** | -.13 | .08 | .07 | .01 | .07 | .27* | .23* | -.05 | .00 | .13 | .07 |
| insists on fair play | .02 | .37** | .15 | .05 | .20 | .28* | .04 | -.25* | .12 | .28* | .14 | -.07 |
| requires supervision | -.31** | -.22 | .05 | .14 | .02 | .03 | .03 | .29 | .10 | .03 | .05 | .12 |
| has creative ideas | .01 | -.01 | .07 | .20* | -.09 | .01 | .31* | -.43* | -.10 | .35* | .08 | -.13 |
| ignores injustice | -.08 | .21 | .07 | .04 | .04 | .27* | .03 | .22* | -.03 | -.14 | -.14 | .06 |
| is tolerant of others | .07 | .11 | -.30 | .08 | .01 | -.08 | .04 | .17 | -.09 | .06 | .01 | .06 |
| Peer Nominations-"This is a child who....." | | | | | | | | | | -.22 | | |
| is willing to share | .08 | -.17 | .03 | -.07 | .07 | -.19 | .02 | .01 | -.08 | -.13 | .13 | .04 |
| makes fun of others | -.09 | -.14 | .15 | .19* | .12 | -.18 | .09 | .09 | .27* | -.08 | .29* | .08 |
| defends others | -.33** | .09 | .01 | .04 | .17 | .03 | .01 | -.07 | .37** | -.13 | .02 | -.06 |
| wants help a lot | -.09 | .02 | .24* | .11 | .01 | .08 | .12 | .35* | .00 | .02 | .22 | .26* |
| follows rules when teacher gone | .28* | .05 | .03 | -.18* | .00 | .07 | .09 | .05 | .04 | .23 | .05 | .04 |
| has many friends | .02 | -.13 | .25* | .24** | .45** | .23* | -.09 | -.09 | .35** | .21 | .08 | .09 |
| goes along with other children | -.13 | -.12 | -.19 | .02 | .03 | -.26* | .05 | -.19 | .03 | -.16 | .13 | -.16 |
| will help others with problems | .15 | .02 | -.10 | -.13 | -.20 | .18 | .00 | -.15 | -.17 | .31* | .20 | -.09 |
| makes good plans | -.03 | .12 | .09 | .18* | .03 | .05 | .09 | -.17 | .03 | .02 | .16 | -.08 |
| gets other children to do things | -.11 | -.23 | .60** | .11 | .07 | .01 | .22 | .36* | .26* | .02 | .31** | .31* |
| does what grown ups think is right | .09 | .07 | -.19 | -.16 | -.04 | .20 | .00 | .01 | -.10 | .00 | .03 | -.01 |
| has ideas for things to do | -.25* | -.07 | .13 | .15 | .16 | .08 | .14 | -.28* | .04 | .14 | .20 | -.23* |
| works for good of group | -.21* | .11 | -.09 | .07 | -.11 | .07 | .20 | -.07 | -.05 | .09 | .01 | -.07 |
| gets angry when doesn't get way | -.11 | .06 | .14 | .38** | .19 | .11 | -.11 | .27* | .21 | .12 | .00 | .10 |
| is a sissy (boys only) | -.21 | - | .12 | - | -.04 | - | .07 | - | -.13 | - | .06 | - |
| is a tomboy (girls only) | - | .03 | - | .03 | - | .00 | - | .16 | - | .14 | - | .23* |
| Competitive Response | .24* | - | .25* | .10 | -.06 | - | .07 | .16 | -.18 | - | -.16 | .02 |
| Cooperative Response | .21* | - | .29** | - | .04 | - | -.12 | -.07 | .06 | - | .05 | .04 |
| Creativity: Fluency | -.15 | - | .02 | - | .13 | - | .00 | .01 | .28* | - | .00 | -.13 |
| Flexibility | -.24 | - | -.14 | - | .19 | - | .22 | .05 | .32* | - | .15 | -.13 |
| Originality | -.08 | - | .13 | - | .41* | - | -.13 | .44* | .46* | - | .08 | .24* |

* $p < .05$ ** $p < .01$

Table 6

Personality and Social Adjustment Variables as related to Participation in Sport and Games by Fifth and Sixth Grade Boys

| | | Deviation Scores (8) Low Sport Low Game | (8) Low Sport Hi Game | (13) Hi Sport Low Game | (1?) Hi Sport Hi Game | |
|---|---|---|---|---|---|---|
| | $\bar{X}$ | | | | | F |
| Self Esteem | 19.53 | -.64 | -1.50 | -.01 | 1.23 | 3.21** |
| Locus of Control | 13.70 | .18 | .12 | .16 | -.32 | ns |
| Machiavellianism | 26.88 | -.30 | .15 | -.42 | .48 | ns |
| Tolerance for Ambiguity | 16.79 | -.95 | -1.01 | .29 | .85 | 2.285* |
| Teacher Ratings | | | | | | |
| cooperates with you | 3.78 | .93 | -.56 | .23 | -.24 | ns |
| cooperates with children | 3.81 | .49 | -.79 | .18 | .01 | ns |
| is persistent individually | 3.33 | -.03 | -.81 | .44 | -.06 | ns |
| is persistent in groups | 3.04 | -.02 | -.55 | .30 | -.04 | ns |
| is helpful to others | 3.26 | -.04 | -.15 | .49 | -.33 | ns |
| breaks rules | 3.00 | -1.03 | .77 | .19 | -.18 | ns |
| insists on fair play | 3.61 | -.48 | -.17 | .15 | .06 | ns |
| requires supervision | 2.75 | -.78 | .53 | .14 | .11 | ns |
| has creative ideas | 3.43 | -.88 | -.07 | .34 | -.05 | ns |
| ignores injustice | 2.20 | .08 | .01 | -.16 | .13 | ns |
| is tolerant of others | 3.96 | .35 | .06 | .25 | -.39 | ns |
| Peer Nominations-"This is a child who...." | | | | | | |
| is willing to share | 9.59 | -3 50 | -.06 | .12 | 6.69 | ns |
| makes fun of others | 8.77 | -3.49 | 5.34 | .51 | -7.20 | ns |
| defends others | 8.86 | 1.98 | 4.08 | -7.86 | -5.58 | 2.781* |
| wants help a lot | 7.91 | 1.09 | .15 | 1.66 | -4.05 | ns |
| follows rules when teacher gone | 10.11 | -6.04 | -.23 | -5.97 | 17.74 | 4.577** |
| has many friends | 9.75 | -6.60 | 6.72 | -6.46 | 2.39 | 4.352** |
| goes along with other children | 8.39 | .92 | .97 | 3.04 | -7.10 | 1.832 |
| will help others with problems | 11.05 | -1.66 | -1.81 | 3.81 | 3.67 | ns |
| likes to play games without others | 9.30 | 1.63 | .18 | -7.01 | 3.56 | 1.607 |
| makes good plans | 10.16 | .15 | 1.19 | -6.30 | 3.13 | ns |
| doesn't play games with others | 5.39 | -.54 | -2.27 | 7.90 | 1.39 | 2.165 |
| gets other children to do things | 9.64 | .29 | 1.95 | -4.06 | -1.21 | ns |
| does what grownups think is right | 9.75 | 1.33 | -2.63 | -5.32 | 9.25 | 1.458 |
| has ideas for things to do | 9.36 | 2.56 | .93 | -7.08 | .06 | 1.207 |
| works for good of group | 8.55 | -.08 | -1.90 | .17 | 4.60 | ns |
| gets angry when doesn't get way | 10.62 | -2.40 | 3.28 | 2.18 | -4.42 | ns |
| is a sissy (boys only) | 10.17 | 1.83 | 3.33 | .23 | -10.17 | 1.477 |
| is a tomboy (girls only) | - | - | - | - | | |
| Competition Response | 27.45 | .89 | -3.45 | 4.35 | .95 | 1.559 |
| % Cooperative Response | 30.03 | -.59 | 6.87 | -9.43 | -3.23 | 1.097 |
| Creativity: Fluency | 16.70 | -2.76 | -.19 | 1.37 | -1.87 | ns |
| Flexibility | 10.70 | -.10 | 3.88 | -.137 | -.51 | 3.587** |
| Originality | 2.55 | -1.87 | -1.24 | 1.29 | -.80 | ns |

* p <.10 ** p <.05

Table 7

Regression of Sport and Game Participation
on Personality and Social Adjustment Variables

| | Beta Weights | | | | | |
|---|---|---|---|---|---|---|
| | Number of years in Sports | | | Hours in Game Participation | | |
| | I | II | III | I | II | III |
| Self Esteem | .10 | .24 | .16 | -.09 | -.03 | .04 |
| Locus of Control | .27 | -.10 | -.11 | .01 | -.05 | -.09 |
| Machiavellianism | .09 | -.07 | .14 | -.14 | .02 | .08 |
| Tolerance for Ambiguity | .14 | .33* | .10 | .01 | .06 | -.03 |
| Teacher Ratings | | | | | | |
| cooperates with you | -.02 | -.28 | .15 | .06 | -.28 | -.07 |
| cooperates with children | .10 | -.02 | .26 | .06 | -.28 | -.08 |
| is persistent individually | .04 | .11 | .44** | .01 | -.40* | -.05 |
| is persistent in group | .16 | .00 | .32* | .15 | -.17 | -.12 |
| is helpful to others | .02 | .01 | -.01 | .15 | -.16 | .04 |
| breaks rules | -.33** | -.04 | .08 | -.04 | .23 | .02 |
| insists on fair play | -.06 | .07 | -.05 | -.07 | .17 | -.01 |
| engages in games | .00 | .33 | .25 | .23 | .14 | .16 |
| requires supervision | -.36** | -.01 | -.11 | -.11 | -.06 | .07 |
| has creative ideas | .00 | -.01 | .33* | -.09 | -.09 | -.17 |
| ignores injustice | -.16 | -.08 | -.07 | -.04 | -.11 | .04 |
| is tolerant of others | .09 | -.44* | -.05 | -.08 | -.26 | -.12 |
| Peer Nominations-"This is a child who...." | | | | | | |
| is willing to share | .07 | .03 | -.09 | -.06 | .13 | .06 |
| makes fun of others | -.14 | .11 | .19 | .27 | .26 | .06 |
| defends others | -.36** | .03 | -.09 | .34** | .01 | .01 |
| wants help alot | -.12 | .22 | .14 | .03 | .18 | .24 |
| follows rules when teacher gone | .29* | -.03 | -.21 | .00 | -.06 | .11 |
| has many friends | -.02 | .25 | .18 | .36* | .07 | .11 |
| goes along with other children | -.14 | -.20 | .02 | -.04 | .14 | -.17 |
| will help others with problems | .16 | -.11 | -.16 | -.17 | -.20 | -.03 |
| likes to play games with others | -.10 | .06 | .08 | .05 | -.02 | .03 |
| makes good plans | -.06 | -.08 | .14 | .02 | .13 | -.08 |
| doesn't play games with others | .11 | -.19 | -.16 | -.08 | -.23 | -.16 |
| gets other children to do things | -.15 | .59** | .09 | .25 | .29* | .33* |
| does what grownups think is right | .09 | -.19 | -.25* | .09 | -.04 | .09 |
| has ideas for things to do | -.26* | .13 | .09 | .02 | .20 | -.22 |
| works for good of group | .20 | -.10 | .05 | -.02 | .01 | .06 |
| gets angry when doesn't get way | -.12 | -.04 | .40** | .26 | .12 | .03 |
| is a sissy (boys only) | -.45** | .07 | - | -.18 | -.03 | - |
| is a tomboy (girls only) | - | - | .02 | - | - | .25* |

[1] I = 3-4 grade, Unit II males
II = 5-6 grade, Unit III males (about ½ of the teacher ratings for this group were lost in mailing
III = 5-6 grade, Unit III females

*p < .05 ** p < .01

Table 8

Personality and Social Adjustment as related to Self-Perceived Performance Level in Fifth and Sixth Grade Boys (N=55)

| | Means | | | |
|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3[1] | F |
| Self Esteem | 17.89 | 19.54 | 19.50 | 1.79 |
| Locus of Control | 12.78 | 13.75 | 13.86 | ns |
| Machiavellianism | 26.22 | 27.08 | 27.00 | ns |
| Tolerance for Ambiguity | 16.55 | 16.45 | 17.27 | ns |
| Teacher Ratings | | | | |
| cooperates with you | 3.45 | 3.75 | 3.21 | ns |
| cooperates with children | 3.45 | 3.75 | 3.35 | ns |
| is persistent individually | 3.00 | 3.50 | 2.50 | 2.55* |
| is persistent in groups | 2.27 | 3.18 | 2.64 | 2.10 |
| is helpful to others | 3.36 | 3.27 | 2.92 | ns |
| breaks rules | 2.54 | 2.87 | 3.28 | ns |
| insists on fair play | 3.90 | 3.94 | 3.14 | 2.59* |
| requires supervision | 2.64 | 2.44 | 3.29 | 1.65 |
| has creative ideas | 3.63 | 3.62 | 3.14 | ns |
| ignores injustice | 1.90 | 2.10 | 2.50 | ns |
| is tolerant of others | 3.45 | 3.68 | 3.64 | ns |
| Peer Nominations-"This is a child who....." | | | | |
| is willing to share | 14.54 | 9.13 | 10.08 | ns |
| makes fun of others | 4.18 | 8.45 | 13.83 | ns |
| defends others | 13.18 | 7.63 | 9.43 | ns |
| wants help a lot | 7.90 | 8.90 | 9.30 | ns |
| follows rules when teacher gone | 22.81 | 3.63 | 12.52 | 5.43*** |
| has many friends | 2.91 | 9.18 | 14.65 | 3.66** |
| goes along with other children | 14.36 | 11.36 | 8.08 | ns |
| will help others with problems | 11.27 | 11.31 | 7.04 | ns |
| likes to play games with others | 8.81 | 10.22 | 17.08 | ns |
| makes good plans | 9.36 | 10.27 | 9.00 | ns |
| doesn't play games with others | 10.81 | 9.22 | 6.69 | ns |
| gets other children to do things | 3.09 | 15.72 | 10.00 | 2.13* |
| does what grownups think is right | 10.64 | 6.09 | 12.78 | 2.10* |
| has ideas for things to do | 7.54 | 13.04 | 10.69 | ns |
| works for good of group | 15.54 | 9.81 | 9.56 | ns |
| gets angry when doesn't get way | 7.54 | 9.09 | 9.39 | ns |
| is a sissy (boys only) | 18.56 | 10.13 | 7.18 | ns |
| is a tomboy (girls only) | - | - | | - |

* $p < .10$ ** $p < .05$ *** $p < .01$

[1] "Compared to others, I am....
Level 1 = "in lowest 10%" or "below others"
Level 2 = "average"
Level 3 = "above average" or "top 20%"

Table 9

Relationship of Multiple Sport Participation in Fifth and Sixth Grade Boys to Personality and Social Adjustment Variables (N=55)

| | Means | | |
|---|---|---|---|
| | One Sport Only | Multiple Sports | F |
| Self Esteem | 18.44 | 19.57 | 2.68* |
| Locus of Control | 13.75 | 13.58 | ns |
| Machiavellianism | 27.00 | 26.87 | ns |
| Tolerance for Ambiguity | 16.93 | 16.74 | ns |
| Teacher Ratings | | | |
| cooperates with you | 3.36 | 3.53 | |
| cooperates with children | 3.18 | 3.66 | ns |
| as persistent individually | 2.90 | 3.06 | ns |
| is persistent in group | 2.95 | 2.87 | ns |
| is helpful to others | 2.81 | 3.31 | ns |
| breaks rules | 2.72 | 3.00 | ns |
| insists on fair play | 3.63 | 3.66 | ns |
| engages in games | 3.72 | 4.20 | ns |
| requires supervision | 2.81 | 2.76 | ns |
| has creative ideas | 3.09 | 3.60 | 2.89* |
| ignores injustice | 2.00 | 2.30 | ns |
| is tolerant of others | 3.54 | 3.63 | ns |
| Peer Nominations-"This is a child who....." | | | |
| is willing to share | 9.82 | 10.00 | ns |
| makes fun of others | 5.94 | 11.51 | ns |
| defends others | 9.88 | 9.28 | ns |
| wants help a lot | 8.17 | 9.17 | ns |
| follows rules when teacher gone | 12.00 | 10.64 | ns |
| has many friends | 7.05 | 11.56 | ns |
| goes along with other children | 13.71 | 9.25 | ns |
| will help others with problems | 10.58 | 9.10 | ns |
| likes to play games with others | 15.94 | 11.38 | ns |
| makes good plans | 6.41 | 10.95 | 3.32* |
| doesn't play games with others | 11.53 | 7.17 | ns |
| gets other children to do things | 4.71 | 13.59 | 3.31* |
| does what grownups think is right | 10.82 | 9.26 | ns |
| has ideas for things to do | 10.00 | 11.43 | ns |
| works for good of group | 13.64 | 9.61 | ns |
| gets angry when doesn't get way | 7.23 | 9.64 | ns |
| is a sissy (boys only) | 12.65 | 9.71 | ns |
| is a tomboy (girls only) | - | - | |
| Creativity: Fluency | 12.02 | 13.01 | ns |
| Flexibility | 9.18 | 8.85 | ns |
| Originality | 1.25 | 2.41 | ns |

* $p < .07$

Table 10

Participation Rates and Self-perceived Ability of Males and Females in Fifth and Sixth Grades During 1977

| | Males | | Females | |
|---|---|---|---|---|
| Participants | 41 | (60%) | 46 | (56%) |
| Non-participants | 27 | (40%) | 36 | (44%) |
| Baseball | 3 | | 7 | |
| Basketball | 1 | | 4 | |
| Football | 0 | | 2 | |
| Gymnastics | 0 | | 2 | |
| Hockey | 2 | | 1 | |
| Soccer | 2 | | 7 | |
| Combination or other | 33 | | 23 | |
| **Level of Part in Sport 1** | | | | |
| 1 - lowest 10% | 1 | | 2 | |
| 2 - below average | 2 | | 2 | |
| 3 - average | 13 | | 34 | |
| 4 - above average | 12 | | 6 | |
| 5 - best 10% | 13 | | 2 | |
| **Level of Part in Sport 2** | | | | |
| 1 - lowest 10% | 0 | | 1 | |
| 2 - below average | 5 | | 3 | |
| 3 - average | 9 | | 11 | |
| 4 - above average | 7 | | 4 | |
| 5 - best 10% | 11 | | 5 | |
| **Level of Part in Sport 3** | | | | |
| 1 - lowest 10% | 2 | | 1 | |
| 2 - below average | 2 | | 0 | |
| 3 - average | 5 | | 8 | |
| 4 - above average | 7 | | 2 | |
| 5 - best 10% | 5 | | 1 | |

Table 11

Relationship between Sport Participation and Personality Change[1]

| | Means | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Male | | | | Female | | | |
| | Participation | | No Participation | | Participation | | No Participation | |
| | Pre | Post | Pre | Post | Pre | Post | Pre | Post |
| Self Esteem | 18.75 | 19.93 | 19.00 | 19.81 | 17.63 | 19.09 | 18.17 | 19.69 |
| Locus of Control | 13.57 | 12.95 | 14.17 | 13.44 | 13.80 | 13.28 | 13.93 | 12.83 |
| Machiavellianism | 26.50 | 26.63 | 27.27 | 27.33 | 26.66 | 26.59 | 26.89 | 26.13* |
| Tolerance for Ambiguity | 15.93 | 16.61 | 16.33 | 16.30 | 15.91 | 17.02 | 16.00 | 16.69 |

* $p < .09$

[1] Analysis of variance with prescore as covariate

Table 12

Relationship between Self-Perceived Level of Sport Performance and Changes in Personality[1]

| | Male | | | | | | Female | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Level 1 | | Level 2 | | Level 3[2] | | Level 1 | | Level 2 | | Level 3 | |
| | Pre | Post | Pre | Post | Pre | Post | Pre | Post | Pre | Post | Pre | Post |
| Self-Esteem | 18.00 | 18.67 | 18.91 | 19.46 | 18.79 | 20.32 | 17.50 | 18.25 | 17.56 | 19.20 | 18.00 | 19.00 |
| Locus of Control | 12.33 | 12.33 | 13.91 | 13.07 | 13.57 | 12.96 | 13.75 | 13.50 | 13.72 | 13.25 | 14.17 | 13.37 |
| Machiavellianism | 25.67 | 27.00 | 26.72 | 26.53 | 26.50 | 26.64 | 26.75 | 26.25 | 26.64 | 26.70 | 26.66 | 26.25 |
| Tolerance for Ambiguity | 15.67 | 17.00 | 15.63 | 16.38 | 16.21 | 16.68 | 15.75 | 18.50 | 15.80 | 17.17 | 16.50 | 15.62* |

[1]Analysis of variance of post scores with pre scores as covariate

[2]Level 1 = "lower 10%" or "below average"
Level 2 = Average
Level 3 Above average

*p > .07